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*A History of
Federal Water Resources
Programs, 1800-1960*

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ABSTRACT

This publication discusses most of the significant Federal water resources legislation up to 1960 and describes the programs of U.S. planning and construction agencies; the extent of Federal river basin planning and development up to 1960; and the beginning of Federal encouragement of and cooperation with State and local planning.

Also discussed are national political issues related to water resources; relationships between Congress and the Executive and between Federal planning agencies; and the origins and continuation of traditional Federal policies and programs favoring natural resources development to strengthen the economic condition of smaller cities, agriculture, and the West. The final chapter investigates the extent to which, after World War II, the Federal "water establishment" became aware of and able to cope with the water resources problems resulting from unprecedented growth of metropolitan centers and technological change.

Keywords: Water resources, planning, development, legislation, agencies, river basins, water politics, study commissions.

Cover illustration is one panel of a mural, "The Building of a Dam," painted by William Gropper in 1937. The mural is in the main building of the U.S. Department of the Interior, Washington, D.C.

PREFACE

This publication presents a history of Federal water resources planning and development programs from 1800 to 1960. Although this history begins at the beginning of the Republic, chapter I, a discussion of water resources programs in the 19th century, is included mostly for background and is not as detailed or analytical as the succeeding chapters.

The publication is divided into five chapters, each one treating a successive period in which the development of water resources policies and programs can be viewed as responding to a distinctive national mood. These are, in addition to the 19th century, the "Progressive" period, the 1920's, the New Deal, and the

post-World War II period. This division of history into "eras" is necessarily arbitrary. An attempt has been made to indicate continuity of policies and methods from one period into the next.

For each time period, the ideological background out of which water programs emerged is examined. The role of Congress, the executive branch as a whole, the individual water agencies, and the public or segments of the public is described. Also described are the development of planning methods, the efforts made to centralize or coordinate planning, and the beginning of Federal assistance to State and local water planning and development.

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A History of Federal Water Resources Programs, 1800-1960

by Beatrice Hort Holmes*

INTRODUCTION

The Federal Government of the 1970's has a great number of domestic responsibilities. It is a truly "national" Government, involved to some degree in almost every concern in which there can be said to be a national interest—including health, labor, housing, education, social security, the development of science and technology, and the protection of the environment.

Therefore, it is surprising to discover from this study of a limited part of American history, that water resources planning and development have been very important in the work of the Federal Government. The Government was involved in planning and building water projects at a time when it participated very little in programs concerning most of its other current domestic concerns. Furthermore, issues involving the Federal role in water management have frequently been important in American politics, and they still are.

Part of the reason for the slower development of other Federal domestic programs is the constitutional limitation of the powers of the Federal Government. Unlike the Government's powers to act on most of its other current domestic concerns, its constitutional powers to develop water resources and regulate development by non-Federal interests were recognized early. Originally, all water resources problems were State or local responsibilities, but as various problems emerged into national consciousness, new Federal programs began to deal with those problems. Existing Federal programs were not returned to the jurisdiction of the States and localities when they came to seem less nationally urgent. Instead, they were accepted as traditional Federal responsibilities.

The first Federal water planning effort, the navigation improvements program of the Army Corps of

Engineers, began in the first half of the 19th century. Our rivers were a principal means and a chart of westward expansion in those early years, providing a set of interstate "highways" for commerce between old and new areas of settlement. Consequently, their protection and improvement became an early responsibility of the Federal Government.

The next great Federal water resources effort occurred at the beginning of the 20th century. With the passage of the Reclamation Act in 1902, the Government made use of its proprietary powers over great areas of public lands in the West to build irrigation reservoirs to supply water for family farm settlement. It also used its power over public lands and navigable waters to set standards, in the public interest, for non-Federal development of water power. The concept that Federal development of water power could be undertaken in combination with navigation, flood control, and irrigation projects also originated in that period. This concept began to have its effect on the planning of the Bureau of Reclamation (U.S. Department of the Interior) and the Corps of Engineers in the 1920's.

During the great depression of the 1930's, the Federal Government used massive public works programs to stimulate business and provide jobs for the unemployed. Bureau of Reclamation and Corps of Engineers plans for multiple-purpose use of water resources were made the basis of huge reservoir projects. The newly created Tennessee Valley Authority was given authority to develop the water resources of an entire river basin, the Tennessee River system, for the combined purposes of flood control, navigation, power generation, and regional economic and social progress. And a nationwide program of flood control improvements was initiated.

At the same time, the Federal Government set up central planning institutions to coordinate Federal con-

*Natural Resource Economics Division, Economic Research Service, U.S. Department of Agriculture, and member of the New York bar.

struction agency plans on the river basin level and to prepare advance programs for public works planning and construction.

Of equal significance as a precedent for recent developments, the Federal Government began during the New Deal to help State and local governments do their own planning and public works construction. Federal financial assistance to State and local governments in that period permitted considerable progress in sewage treatment plant construction, for example.

But with the return of prosperity that followed U.S. involvement in World War II, much of the machinery for this centralization of Federal planning and assistance to State and local planning was abandoned.

In 1943, however, the Departments of the Interior, Agriculture, and War and the Federal Power Commission set up a procedure for review of each other's planning reports on the regional and national levels. In cases where agency plans were in conflict or it was anticipated they would conflict, interagency river basin committees were established to coordinate activities and obtain the cooperation of the affected States. But the river basin committees were only partially successful in achieving these objectives.

Despite the absence of postwar central planning, there was a great expansion of the two largest construction programs—the flood control and navigation improvements program of the Corps of Engineers and the irrigation program of the Bureau of Reclamation. Both programs emphasized multiple-purpose reservoirs, including facilities for water power development. At the same time, the Soil Conservation Service (USDA) assumed major planning responsibilities when it added construction of small, upstream flood control structures to its ongoing work of land treatment for watershed protection. During the 1950's, this program evolved into one that gave Federal planning and financial assistance to local organizations in the construction of small improvements for flood control, agricultural uses of water, and other useful purposes.

Throughout the postwar period,* the debate over water resources development was primarily concerned with its economic effects. The principal benefit claimed by advocates of Federal participation was the

value for national economic growth. The principal check on Federal participation was opposition to claimed economic inefficiency and resentment of what some believed to be unjustifiable discrimination against those who contributed to the investment but did not benefit from the result. But toward the end of the postwar period, the Federal Government became more active in planning for essentially environmental, rather than economic growth, purposes—such as pollution control, recreation, fish and wildlife development and protection, and municipal water supply. Additional municipal water supply is, of course, an important economic growth issue in the West, but in the Delaware Basin service area, for example, it is an amenity, perceived as necessary for a pleasanter urban environment.

This publication covers the period through 1960. At the beginning of 1961, the Senate Select Committee on National Water Resources issued a report which can be viewed as the first of several events that were to usher in a new era in water resources planning and research.

Since 1961, many important changes have taken place in Federal water resources planning. As a result of the new national commitment to environmental quality, many additional changes may take place in the 1970's.

However, many things remain the same. With the exception of the Public Health Service, the major planning agencies prior to 1961 are still major planning agencies. The coordinated planning work done in the field still distinguishes Federal from State responsibilities and the primary purposes of one planning agency from those of another. Individual projects are authorized separately under the surveillance of separate congressional committees. Appropriations to each agency are also made separately.

Perhaps most importantly, the ideological differences over water resources development and management that existed in the 1950's still exist; so do both the national and the "grass roots" supporters and opponents of proposed Federal water projects. Thus, to understand the present organization and modus vivendi of Federal water resources programs, it is necessary to understand their history.

*Meaning, roughly, 1946-60 for purposes of this report.

I. THE NINETEENTH CENTURY

The Federal Navigation Improvements Program: The Political Background

From the beginnings of our national history, the Federal Government was interested in promoting inland water transportation. It expressed this interest in grants of public lands for river improvement (1),* Federal purchase of stock in canal companies (2), and declarations in the acts governing new territories and admitting new States that navigable waters shall be "public highways" and "forever free." (3)

In the first decades of the century, almost all waterways improvements were made by State Governments and private companies. (4) But the westward movement inspired demands for a Federal program of transportation improvements. Thus, after the Louisiana purchase, the Senate asked Secretary of the Treasury Albert Gallatin for a national development plan of roads and canals. (5)

The Gallatin Report of 1808 proposed, together with other internal improvements, a complete, nationwide system of canals and river improvements justified on grounds of economic development of the West, political unity, and national defense needs. (6)

The Gallatin report and revisions of it in reports of Secretary of War John C. Calhoun in 1819, Senator William Windom's Select Committee on Transportation Routes to the Seaboard in 1874, and the Inland Waterways Commission in 1908, provided the basis of many proposed waterways projects. (7) But despite the admitted need for internal improvements, the Gallatin report had no immediate effect because of a constitutional dispute between "nationalist" proponents and such strict constructionist Presidents as James Madison and James Monroe. Secretary Calhoun was not aware that Federal participation in internal improvements could be justified by the power to regulate interstate commerce. Instead, he contended that Congress' power to spend for the common defense and the general welfare included the power to establish a system of internal improvements. (8)

The dispute was resolved by the Supreme Court in 1824 in the famous decision of *Gibbons v. Ogden*, in which Chief Justice John Marshall proclaimed that Congress' power to regulate interstate commerce included a power over navigation "within the limits of every state in the Union so far as that navigation may

be in any manner connected with the commerce. . . ." (9)

The Court's decision and the concurrent passage of legislation for improvement of the Ohio and Mississippi Rivers by channel clearing began the modern program of federally operated and financed navigation improvements. (10)

However, the propriety of Federal internal improvements remained a political issue. It was to be one of the great controversies of the pre-Civil War period, marshalling loose coalitions of nationalist Whigs and westerners against Democrats and southerners. (11)

At the same time that Congress began its rivers and harbors improvements program, it continued to make land grants to States to promote river improvements. However, the improvements that resulted were not substantial and the demand for Federal undertakings increased. (12) After the Civil War, despite the fact that expansion of railroad development diverted a great deal of Federal attention, appropriations for rivers and harbors improvements continued to increase. (13)

The 1874 report of the Windom Select Committee marked the beginning of the ideology that was to animate the waterways legislation of the "progressive period," beginning in 1901. The report favored a comprehensive program of waterways improvements to provide midwestern farmers with cheaper transportation than was offered by railroads. (14) And an 1882 veto message of the "clean government" President Chester A. Arthur reveals that the rivers and harbors appropriations had already begun to be viewed as the political pork barrel by reformers. (15)

The First Construction Agency—The Army Corps of Engineers

The U.S. Army Corps of Engineers became the engineering department of the Federal Government, largely because it was the only source in the United States with the requisite technical abilities. In its new role, the Corps became responsible for the great program of national internal improvements which began in the 1820's. (16)

In 1824, Congress passed the General Survey Act (which was repealed in 1838) empowering the President to employ civil engineers and "officers of the Corps of Engineers" in making survey plans and estimates of such "roads and canals as he may deem of national importance." (17) This legislation initiated a

*Italicized numbers in parentheses refer to backnotes.

brief period of centralized national planning of internal improvements during which the Corps did the initial planning of such major works as The Chesapeake and Ohio Canal and the completion of the Cumberland Road. (18)

But it is noteworthy that the Corps' planning responsibilities for rivers and harbors improvements, which also began about 1824, were not authorized generally by the General Survey Act but by separate congressional enactments. (19) The first omnibus Rivers and Harbors Act, authorizing specified improvements and new surveys, was passed in 1826.

For many years thereafter authorizations and appropriations were made for rivers and harbors improvements together with other kinds of measures in the same bill and in individual bills passed for individual projects. (20) However, the omnibus Rivers and Harbors Act, giving separate authorization for the planning phases of some projects and the construction phases of others, gradually became the prototype of the enabling legislation of the Corps' navigation improvements program (and later of its flood control program). (21)

During the great increase in river and harbor improvements following the Civil War, political factors often caused a demand for improvement of some river or harbor which was found when surveyed to have no commercial potential. To avoid the cost of a full examination and survey and of making estimates in such cases, Congress in 1884 passed general navigation legislation directing that no survey should be made of any harbors or rivers until the district engineer has ascertained at the locality that "said harbor or river is worthy of improvement." This step in the planning process became known as the preliminary examination. (22)

But the power of deciding whether a place was worth improving was not used by the Corps to formulate a national policy or general program for the construction of public works. This was regarded as the responsibility of Congress. (23)

Beginning in the middle of the 19th century, successive acts of Congress also gave the Corps of Engineers responsibility to protect the navigability of waters against various kinds of encroachment. By the end of the century, the Corps was charged with a regulatory responsibility concerning bridges, wharves, piers, channels and harbors, diversions of water, and deposits of refuse and other materials. (24) This navigation responsibility has not had an important effect on Federal planning until very recently, except as a precedent for other types of Federal oversight of non-Federal water resources development.

The Beginnings of Federal Interest in Other Water Resources Activities

Flood Control

Flood control remained a purely local concern much longer than navigation. But national interest in it grew in urgency with the growth of settlement in the flood-ravaged lower Mississippi Basin.

In 1849 and 1850, Congress passed the Swamp Lands Acts granting Federal lands subject to flooding in Arkansas, Louisiana, Mississippi, and Missouri to those States with the proviso that the proceeds from their sale be used for flood control or drainage projects. (25)

In the next two decades, at the proposal of Congress, the Corps of Engineers undertook surveys of the flood problems of the Mississippi and reported the necessity of extensive levee construction, beyond the financial capability of the States and localities. But proposed appropriations were defeated, in part because of post-Civil War sectional hostilities. (26)

In 1874, after a disastrous flood, Congress appointed a commission of engineers to report a permanent plan for reclaiming the part of the Mississippi Valley that was subject to flooding. The resulting report discussed alternative flood control methods and severely criticized the ineffectiveness of uncoordinated local levee construction programs. (27)

This led in 1879 to the establishment of the Mississippi River Commission, composed of three members of the Corps, one of the U.S. Geological Survey, and three persons from civil life. The Commission was empowered to survey the river and prepare plans which would improve navigation and prevent floods. (28) However, until 1890, Congress restricted appropriations for the Commission to improvement of navigation (that is, channel improvements), expressly prohibiting use of Federal funds on levees. (29)

Another regional planning group led by the Corps was the California Debris Commission, established in 1893. This commission was directed to prepare plans for the Sacramento and San Joaquin River systems to prevent flooding and protect navigability from the encroachment of hydraulic mining debris. (30)

Growth of the conservation movement toward the end of the 19th century led to appreciation of the importance of forest cover for flood prevention and protection of water supplies and stream flow. Thus, the first national forest legislation—enacted in 1891 and authorizing the President to establish forest reserves in the public domain—was partly motivated by flood control concerns, although the primary motivation was timber conservation. (31)

Irrigation

Federal interest in irrigation grew out of the long-standing Federal policy of endowing a large part of the public domain of the United States on the people who would actually live and work on it. The origins of this policy are associated with the agrarian democracy of Thomas Jefferson. Although it was openly opposed by very few, it was always championed more effectively by some than others. (32)

Thus, beginning in 1801, Congress accorded settlers a preference right in various preemption acts providing for the sale of public lands. (33) The first Homestead Act (1862) began the era in which the Government offered free farmland to settlers who would live on it and cultivate it. (34) However, settlement of the arid West, where agriculture was impossible without irrigation, gave rise to problems not present in more humid regions.

The Desert Land Act of 1877 authorized the sale of 640-acre tracts of arid lands in four States and eight territories to persons who would irrigate them within 3 years. (35) However, land speculation created a scandal, and in 1890 Congress limited all entries to 320 acres. (36)

In 1879, the first director of the U.S. Geological Survey, Major J.W. Powell, published a survey of the sparsely settled dry lands in the West. Mainly as a result of this pioneer planning report, an irrigation division was established in the Geological Survey in 1888. (37) Another probable result of the Powell

report was the 1890 statute reserving to the United States a right of way for ditches and canals that it might thereafter construct on all public lands west of the 100th meridian if the ditches and canals would be patented under any of the land laws of the United States. (38) This statute made possible the Reclamation Act of 1902.

The 1894 Carey Act authorized donations of arid land to each public land State for reclamation purposes. Tracts sold by the States were limited to 160 acres and were to be used for irrigation farming. (39) But for reasons varying from lack of adequate hydrologic and soil data to the incapacity of settlers to finance construction, Carey Act projects were not often successful. (40)

Water Power

Beginning in 1879, Congress enacted a great many special statutes which either authorized the Secretary of the War to lease water power or "surplus water" to private companies or authorized the construction of private power dams. (41) While subject to alteration or repeal, most of these statutes were perpetual in their terms and without significant restriction except for protection of navigation. (42) In 1890, Congress also adopted a general prohibition against the building of dams in navigable waters without permission of the Secretary of War. (43)

Political issues involved in these early enactments are discussed in the next chapter.

II. THE PROGRESSIVE PERIOD, 1901-20

The Ideological Background

This period began with the election of Theodore Roosevelt, the great conservationist President. Roosevelt, his close associates, or the official study commissions he appointed, originally sponsored most of the noteworthy program and policy developments of the early 20th century. (44) Woodrow Wilson and, even to some degree, William Howard Taft were also progressive Presidents with relation to water resources planning issues. (45) Historians tend to treat the entry of the United States into World War I as the close of the progressive period in national life, but with respect to water resources planning it seems appropriate to extend the period to 1920.

In 1920, after a decade of legislative struggle, the Federal Water Power Act was finally passed. (46) This

act represented the triumph of two decades of progressive water power policy which will be examined in this section. But passage of the act was coupled with the defeat of the progressive conservationist's goal of national planning for multiple-purpose use of water resources—through the abolition of the 1917 Waterways Commission.

The progressive ideology respecting water resources planning derived from the principles and concerns of the "progressive movement." Other well-known early 20th century innovations in Federal policy resulting from the same movement include the graduated income tax, "trust busting," railroad rate regulation, the Pure Food and Drug Act, timber conservation, the Country Life Commission, tariff reduction, the Federal Reserve System, the National Park System, and the Mineral Leasing Act. (47)

As applied to water resources planning, the principles of the progressive movement were:

1. Conservation of natural resources for use of the people and future generations. (This concept, which combined elements of social justice and elements of "scientific" efficiency, was applied to water resources in the advocacy of multiple-purpose development.)
2. Opposition to control of the economy by monopolies and to consequent exploitation.
3. "Clean" government, with no "giveaways" of the public domain to special interests.
4. A positive desire to encourage small, independent enterprises, such as family-sized farms.
5. The abandonment of laissez faire in favor of a Hamiltonian strong Federal Government, intervening in economic life, but for the Jeffersonian purpose of protecting equality of opportunity and promoting the well being of the people. (48)

Recommendations of Official Study Commissions

Perhaps because Theodore Roosevelt had much regard for the opinion of nonpolitical "experts," a great deal of the innovative thinking in natural resources problems by the progressive conservationists emerged from reports of official study commissions. The reports of the following three commissions can be viewed both as exemplifying the ideology of the time and resulting from it.

The Inland Waterways Commission

The Inland Waterways Commission, appointed by President Roosevelt, reported in 1908 on its survey of U.S. waterways and on commercial navigation and other water resource uses and problems. In addition, the report recommended that Federal rivers and harbors improvement reports take into account all the uses of water that could be benefited by the proposed work, including flood control, water power, irrigation, and even pollution control.

The commission recommended that both local and national benefits be considered in planning "with a view to an equitable distribution of costs and benefits." It also said that plans for waterways improvements should take account of the waterways' relationship to railroad lines, for the purpose of coordinating railroad and waterway traffic in the public interest.

Finally, it recommended the creation of a "National Waterways Commission" to coordinate the work of the

Corps of Engineers, the Reclamation Service, the U.S. Department of Agriculture's Forest Service and Bureau of Soils,* the Bureau of Corporations, and other concerned Federal agencies in making multiple-purpose plans for waterways, in cooperation with State and local governments. (49)

The National Conservation Commission

The National Conservation Commission, appointed by President Roosevelt, reported in 1909. Its water resources report called for massive hydrological research in support of broad plans for multiple-purpose waterways improvements. (50)

The National Waterways Commission

The National Waterways Commission, a joint congressional commission created by the 1909 Rivers and Harbors Act, reported in 1912. It urged specific navigation improvements, legislation regulating public wharves and terminals, prevention of the deforestation of land surrounding mountain streams, and legislation promoting water power development on both the public domain and navigable streams while controlling such development in the public interest.

Perhaps most prophetically it advocated a Federal reservoir system for flood control, stating that the costs could be justified by multiple-purpose benefits, including power development and increased depth of the stream for navigation. (51)

The Planning Agencies

Creation of New Planning Agencies

The Reclamation Service. ** The Reclamation Act of 1902 established the Reclamation Fund with money derived from the sale of public lands in 16 Western States.*** It authorized the Secretary of the Interior to use the Fund to make examinations and surveys and to locate and construct irrigation works in these States. (52)

*Later disbanded and its responsibilities transferred to other USDA units.

**The name of the Reclamation Service was changed in 1923 to the Bureau of Reclamation (U.S. Department of the Interior).

***Arizona, California, Colorado, Idaho, Kansas, Montana, Nebraska, Nevada, New Mexico, North Dakota, Oklahoma, Oregon, South Dakota, Utah, Washington, and Wyoming. Texas was added in 1906.

The Reclamation Act limited the right to use water developed by projects to Homestead Law entries on public lands in project areas and to private tracts in such areas not exceeding 160 acres and occupied by the landowner. Water users were required to repay the estimated cost of construction into the Reclamation Fund without interest, in 10 annual installments.

In 1906, the Secretary of the Interior was authorized to develop water power at reclamation projects where needed for irrigation, and to lease surplus power or the privilege to develop power for 10 years where such lease would not impair the efficiency of irrigation. At the same time, he was authorized to sell municipal water supplies to towns in the vicinity of projects. (53) An act of 1920 empowered the Secretary to sell water "for purposes other than irrigation" where delivery of such water should neither impair water service for the irrigation project nor the rights of prior appropriators. (54)

The Forest Service. In 1905, control over the forest reserves was transferred from the Land Office of the Department of the Interior to the Department of Agriculture, where it was given to the vigorous conservationist, Chief Forester Gifford Pinchot. Inheriting the power to issue permits for water power development, Pinchot introduced a new policy of limiting permits to 50 years and charging fees for the privilege. This policy became very controversial but eventually prevailed against strong congressional opposition. (55)

Whereas the original forest reserves were confined to the public land States of the West, the Weeks Law of 1911 made possible a truly national forest reserve program. The law set up the National Forest Reserve Commission and provided, among other things, that the Secretary of Agriculture, in cooperation with the Geological Survey, could recommend for purchase such lands in the watersheds of navigable streams as were needed to regulate water flow. (56)

The Waterways Commission, 1917-20. This abortive national planning agency was authorized to coordinate the work of all Federal agencies with water resources responsibilities in order to prepare nationwide multiple-purpose plans. The plans could be made by the United States alone or in cooperation with States and localities. (57)

The idea of a national water resources planning agency was originated by the Inland Waterways Commission. Proposed legislation sponsored by Senator Newlands of Nevada had sought its adoption since 1907. (58) The legislation was passed in 1917.

The agency's members were never appointed, largely because of our participation in World War I. (59) While the 1920 Federal Water Power Act

was being debated in Congress, efforts to have the Waterways Commission's functions transferred to the Federal Power Commission were defeated. And the 1920 Act included a provision expressly repealing the legislation creating the Waterways Commission. (60)

The Federal Power Commission (FPC). The FPC (which did not begin to function until the progressive period was over) was in 1920 a Cabinet-level committee of the Departments of War, the Interior, and Agriculture. The 1920 Federal Water Power Act empowered the committee to license non-Federal development of water power on navigable waters and public lands as well as to sell surplus power from Government dams when in the public interest. The law gave preference to public developers and reserved the right of ultimate public ownership.

The commission was also empowered to make nationwide continuing investigations of water resources use, water power potentialities, and the water power industry, in cooperation with other Federal agencies and with the States. (61)

Extension of Corps of Engineers Planning Functions

Water power development. The 1906 and 1910 General Dam Acts prescribed conditions for general application to all non-Federal power development on navigable waters to be subsequently authorized by Congress. These included requiring the applicants for permits to submit plans to the Corps. The Chief of Engineers and the Secretary of War were authorized to approve applications on the basis of multiple-purpose use criteria. (62) (The criteria specified in the 1910 Act were later adopted in the Federal Water Power Act for use by the FPC.) (63)

In 1912, Congress delegated discretionary authority to the Secretary of War to include in the permanent parts of navigation dams such works as may be desirable for future Federal development of water power. (64) General procedural legislation in 1913 required that reports on examinations and surveys include information concerning the development and use of water power. (65) And the Flood Control Act of 1917 provided that flood control examinations and surveys must include "a comprehensive study of the watershed," including the possible economical development and use of water power. (66)

Flood control. Following major floods in 1915 and 1916, Congress enacted the Flood Control Act of 1917, giving the Corps responsibility for planning and constructing flood control works on the Mississippi and Sacramento Rivers. (67) These works did not include reservoir projects. (68)

Development of Planning Procedures

The Corps of Engineers

The Corps of Engineers in this period is said to have been resistant to the concept of multiple-purpose planning. (69) But its procedural legislation did show considerable accommodation to this concept, as well as increasing concern for efficiency and "clean" government.

Legislation in 1902 created a national-level Board of Engineers for Rivers and Harbors to review all reports on preliminary examinations, surveys, projects, or changes in projects and make recommendations to the Chief of Engineers. The Rivers and Harbors Board was required, among other things, to evaluate the commercial potential of the proposed improvement and relate it to the cost of construction and maintenance. (70) The Rivers and Harbors Board successfully achieved its purposes of reducing congressional approval of unsound projects resulting from "log rolling," by providing for the culling of unfeasible projects by the Corps itself with some degree of uniformity. (71)

General legislation provided in 1910 that surveys of navigable streams should include stream flow measurements and other investigations of watersheds necessary for planning and proper consideration of all uses of the stream affecting navigation. (72)

The general procedural legislation of 1913 required that reports on preliminary examinations and surveys must include full information regarding the present and prospective commercial importance of the project, and data respecting the existence and need for private and public terminal and transfer facilities on the waterway.

This legislation also stipulated that reports include data regarding water power development and use. However, such data were to be considered only where it was possible and desirable to coordinate such development and use with navigation improvements, and to relate water power development to the development and regulation of commerce. (73) The Corps did not use this provision at that time as an authorization to recommend the improvement of streams for navigation and water power which might not warrant improvement for navigation alone. Instead, it regarded water power development as a byproduct, to be considered after a navigation project had been approved on its own merits. (74)

The 1917 Flood Control Act provided that all provisions of existing law relating to examinations and surveys, review by the Rivers and Harbors Board, and expenditures of funds for rivers and harbors works

should also apply to flood control works. But it also stated that at least one-half the cost of levee construction should be borne by the State or locality. (75)

With respect to rivers and harbors improvements, Congress had discretion to require local contribution or not, on an individual project basis. (76) The 1920 Rivers and Harbors Act required that each report henceforth contain a statement of the benefit that would accrue to localities affected by the proposed improvement, with recommendations as to what, if any, local contributions should be required. (77)

It was established Federal policy dating back to the Northwest Ordinance and the acts providing for the admission of new States to the Union that tolls could not be charged shippers, as the navigable waters of the United States were "common highways and forever free." And this policy had been buttressed by legislation prohibiting tolls on watercraft passing through any waterway project built for the benefit of navigation. (78)

The Reclamation Service

The 1902 Act directed the Secretary of the Interior to make examinations and surveys and to locate and construct irrigation works. The Secretary was also to report annually to Congress the results of examinations and surveys, giving estimates of the cost of all contemplated works, the quantity and location of the lands to be irrigated, and "all facts relative to the practicability of each irrigation project" together with the cost of works being constructed and those completed.

Although required to report to Congress, the Reclamation Service (unlike the Corps of Engineers) was thus not dependent on Congress for initiation of planning, for authorization of projects, nor, originally, even for appropriations. The Reclamation Fund itself was considered an appropriation from which the Secretary had discretion to make expenditures. (79)

Within a few years, however, increments to the Reclamation Fund from disposal of lands began to diminish and Congress authorized advances to the Fund, as well as its augmentation from other revenues. (80) And in 1914, Congress prohibited expenditures from the Fund except out of annual appropriations by Congress. (81)

The Federal Power Commission

The Act of 1920 gave the FPC authority to carry on continuing surveys of water power development and potentials throughout the United States and also to determine whether power from Federal dams can be

"advantageously used by the United States for its public purposes" and "what is a fair value of such power." (82)

Transfer of Power From the Legislative to the Executive Branch

The most pronounced aspect of the legislative branch's decreasing authority over water resources development concerned water power.

Both Roosevelt and Taft vetoed bills granting private power development privileges on navigable waters. (83) Administration measures intended to prevent congressional "giveaways" in this period included Pinchot's permit system; the 1911 statute authorizing the granting of rights of way for transmission lines over public lands, national forests, and reservations under rules to be determined by the head of the department concerned; (84) and the Federal Water Power Act. (85)

The new irrigation program created by the Reclamation Act of 1902 was also a radical delegation of power to the Executive. The act made a member of the President's Cabinet responsible for determining the location and priority of prospective projects and for planning and constructing them subject to the need to report activities and justify appropriation requests to Congress. And whereas this situation was no different from executive branch responsibility for most Federal programs, it was very different from the relationship of the Executive to the programs administered by the Corps of Engineers.

During this period, the Corps considered itself to be limited by its enabling legislation to the role of technical adviser to Congress on navigation and flood control projects. It did not propose overall waterways plans of its own and did not support the nationwide comprehensive planning legislation supported by the Executive during the administrations of Taft and Wilson. (86)

Coordination or Centralization of Planning Efforts

Although the coordination of Federal planning for the purpose of nationwide multiple-purpose water resources planning (the objective of the abortive 1917 Waterways Commission) was perhaps the principal water resources objective of the progressive conservationists from the time of the report of the Inland Waterways Commission in 1908, it was not accomplished in this period to any substantial degree.

At most, some provisions of the 1920 Federal Water Power Act contained potentials for coordination of Federal planning efforts if properly used. For example, the act required that whenever in the judgement of the Commission "the development of any water resources for public purposes" or the use of any Government dam "for public purposes in addition to navigation" should be undertaken by the United States, the Commission should refuse to issue any license to non-Federal applicants but should prepare certain data and submit its finding and recommendations to Congress. (87) However, the President's Water Resource Policy Commission found in 1950 that there was, at that time, no record that either of these provisions of the act had ever been used. (88)

The broad authority of the Commission to make investigations and collect data concerning water power development and potentialities had little immediate result, but it was to be the basis in later times for FPC participation in river basin planning. (89)

Geographical Jurisdictions and Clienteles

Almost all the innovations in water resources programs during the progressive period were aimed at operations and benefits in the West, Midwest, or South. The reclamation program involved benefits to irrigation farmers only in the 17 Western States. Progressive movement proposals for waterways improvement were intended to benefit midwestern farmers and local businesses on the Ohio, Missouri, and Mississippi Rivers. (90) Flood control measures would save lives and property, chiefly in the Mississippi Valley cities. Regulation of private water power development would benefit industrial development and lower the cost of electricity to the public in the less industrialized West, Midwest, and South.

Reclamation, proposed waterways improvements, and other efforts which involved the immediate distribution of benefits generally attracted strong local support. (91) Local chapters of such organized lobbying groups as the National Irrigation Association, the National Irrigation Congress, the National Rivers and Harbors Congress, and the Lakes to the Gulf Deep Waterway Association actively promoted legislation. (92)

But it would be a mistake to think of the progressive period's water programs as being primarily sectional. Regulation of water power development frequently met local opposition. (93) Irrigation, waterways development, and Federal regulation of this development were all part of a national ideological program. And many of its strongest Government

proponents—such as Theodore Roosevelt, Gifford Pinchot, and Henry L. Stimson, Taft's Secretary of War—were upper class eastern urbanites whose interest in conservation and the West had grown out of enthusiasm for outdoor life.

Furthermore, many middle class urban reformers had supported the Reclamation Act and joined the organized conservation movement in endorsing the reports of Theodore Roosevelt's official commissions in 1908 and 1909. (94)

These people viewed with alarm the way in which post-Civil War industrialism had changed the American

landscape and American society. They were worried about the organization of industry into combinations, and of labor into unions, because they felt that both threatened the independent, self-made man. They believed that city life had transformed politics from the intelligent democratic process of the early days of the Republic to a crude power struggle, dominated by privileged wealth and the corrupt political machines which controlled the votes of slum dwellers. Thus, programs involving both conservation of natural resources and the promotion of farm communities and small towns had a strong appeal for them. (95)

III. THE ERA OF "NORMALCY," 1921-33

The Ideological Background

In the 12 years of Republican ascendancy from 1921 to 1933, the executive branch rejected the anti-monopoly and income redistribution concerns of the 1901-16 period as potentially destructive of American prosperity and economic growth. (96) The three post-World War I administrations were even more concerned with removing the slightest traces of Government competition with private enterprise. (97)

Thus, one of the earliest actions taken by the administration of Warren G. Harding was to terminate all work on the virtually complete Wilson Dam on the Tennessee River. This was the first of a series of electric power dams authorized by a wartime Congress to be built to supply power to a Government explosives plant at Muscle Shoals.

The administration believed that the Muscle Shoals development would be more effectively run by private enterprise. The Secretary of War therefore invited bids from prospective purchasers. Henry Ford, who proposed to use the nitrates plant to manufacture low-price fertilizer and to sell the surplus power or use it in his other enterprises, made the highest offer.* The sale was prevented, largely because of the opposition of Senator George W. Norris, Republican of Nebraska, chairman of the Senate Committee on Agriculture. (98)

On two later occasions, Norris secured passage of legislation providing for a Government corporation empowered to plan and develop the Tennessee Valley for multiple purposes—including power, flood control, navigation, and reforestation—and to generate and sell

power. But both measures were effectively vetoed, in 1928 by Coolidge and in 1931 by Herbert Hoover. (99)

But it was not only in the work of such congressional progressives as Norris and Senator Hiram Johnson, Republican of California (who achieved the passage of the Boulder Canyon Project Act over tremendous opposition, and only by compromising on the issue of Federal construction and ownership of power plants), (100) that the ideology of the progressive period continued to influence water resources policies and programs. The emergence of a new type of conservative attitude toward water resources planning can be seen in the proposals of Herbert Hoover, as Secretary of Commerce under Harding and Coolidge and as President. This included the progressive's concern for conservation of natural resources and technical and organizational efficiency.

As Secretary of Commerce, Hoover advocated both unified national planning of public works and multiple-purpose planning by intergovernmental drainage basin commissions. (101) More successfully, he promoted several planning efforts which, after he became President, resulted in numerous waterways improvements then and many years afterwards. These were projects on the Mississippi and the Great Lakes, Hoover Dam, much of the later development of the Grand Coulee and Central Valley projects, and eventually the Saint Lawrence Seaway. (102) But Hoover (no less than conservatives who were opposed to national planning) came into conflict with progressives on the subject of public power,* (103) an issue destined to be the most politically controversial one in the field of water resources for many years.

*Ford's offer was modified several times but it never proposed payment of more than a tiny fraction of what the Government had already spent; also, Ford contemplated a 100-year lease that would be exempt from regulation by the Federal Power Commission.

*During the 1920's, the electric generating capacity of the United States doubled, as a result of revolutionary technological changes. The high cost of these changes led to combinations (more than a thousand public utilities mergers

After the depression began, President Hoover favored "speeding up public works" to relieve unemployment and urged Congress to authorize and make appropriations for many of the projects he had first supported as Secretary of Commerce. This was done in the Rivers and Harbors Act of 1930. (104) However, he was unwilling to support several subsequent congressional public works proposals, finding them of too remote utility and too expensive from the point of view of balancing the national budget. (105)

Extension of Planning Functions of the Construction Agencies

The Corps of Engineers

In 1925, Congress directed the Corps and the FPC to jointly prepare a list and submit an estimate of the cost of making examinations and surveys of navigable streams and their tributaries on which power development appeared practicable (with the exception of the Colorado River). This was to be done with a view to formulating "general plans for the most effective improvement of such streams for the purposes of navigation and the prosecution of such navigation improvement in combination with development for power, flood control and irrigation." (106) The resulting list of streams was submitted to Congress in 1927 and printed in House Document 308.

The 1927 Rivers and Harbors Act authorized the Corps alone to prosecute these surveys, which became known as the "308 reports." (107)

In 1928, following the worst flood on the Mississippi River since the formation of the Union, Congress adopted an ambitious project for control of

took place in 1926 alone). Many of these involved the sale of municipally owned plants to private companies which were combined in "systems" owned by holding companies. And progressives claimed that rate regulation by State utility commissions was unsatisfactory and frequently corrupt.

While most of the energy for generating power came from fossil fuels, by the 1920's about one-third of the total came from water power, and many of the best sites for dams remained unused. Equally dissatisfied with the adequacy of regulation provided by the FPC, many progressives became interested in the concept of federally owned multiple purpose projects which would, among other things, provide low-priced current to the public. These progressives observed that public power rates could serve as a regulatory yardstick for the power rates of private companies.

Conservatives, then as later, wished to protect from what they considered unfair Federal competition the private power industry, which they considered responsible for unprecedented technical progress and general prosperity.

floods of the Mississippi River in its alluvial valley. Congress stated that because of large local expenditures in the past, the Federal Government would bear the entire cost. (108)

Although the 1928 Act made immediate provision only for levees and diversion floodways, section 10 called for reports on the effect on flood control of the lower Mississippi of a reservoir system on the tributaries. (109) Studies made pursuant to this section of the act showed that the Corps now believed reservoirs were necessary to reduce flood heights and recommended their construction, conditioned on local participation in planning and financing construction. (110)

The Bureau of Reclamation

In this same period, the other construction agency, the Bureau of Reclamation, did acquire regional multiple-purpose planning functions in the Colorado River Basin.

The 1920 Kinkaid Act directed the Secretary of the Interior to investigate the Imperial Valley of California and report on its condition and possibilities for irrigating it by diverting the waters of the lower Colorado River. The resulting report in 1922 recommended construction of a diversionary canal and a large storage reservoir for multiple purposes, and suggested that all future developments on the Colorado River be undertaken by the Federal Government. (111)

Development of the canal, dam, and reservoir was authorized by the Boulder Canyon Project Act of 1928, for the purposes of flood control, navigation, storage of water for reclamation and other beneficial uses,* (112) and generation of power "as a means of making the project . . . a self supporting and financially solvent undertaking." (113) (Revenues from the sale of generated power or power leases and stored water were paid into the Colorado River Dam Fund to finance the dam, reservoir, and power plant.) (114)

The act also directed the Secretary to make investigations and public reports of the feasibility of additional multiple-purpose projects in the other six Colorado Basin States** for the purpose of formulating a comprehensive scheme of development and control of the Colorado River and its tributaries. (115)

*The most important "other use" was to be municipal water supplies for several southern California cities.

**Arizona, Nevada, Colorado, New Mexico, Utah, and Wyoming.

Development of Planning Procedures

The Corps of Engineers

Prior to 1920, the omnibus river and harbor bills had simultaneously authorized planning or construction and appropriated money for it. After 1920, separate authorizing legislation was enacted, and appropriations were made in annual lump sums. This practice led, beginning in 1944, to giant authorization acts in which projects are frequently authorized many years before it is contemplated that they will be constructed. (116)

The Bureau of Reclamation

A report by a committee of special advisers on reclamation became the basis for the 1924 Fact Finders Act. This act provided that, as a condition precedent to construction or submission of estimates for new projects to Congress, the Secretary of the Interior obtain detailed information "concerning the water supply, the engineering features, the cost of construction and the probable cost of development." The Secretary was also directed to submit a finding that the project was feasible, that it was adaptable for actual settlement and farm homes, and that it would probably return the cost to the United States. (117) The 1924 Act also provided that the Secretary classify the irrigable lands of each new project by productivity, and fix water charges against each class of land accordingly. (118)

Transfer of Powers From the Legislative to the Executive Branch

Although the Corps was still dependent on Congress for authorization of projects as well as appropriations, the general investigatory authority of the 308 reports did constitute a considerable delegation of power to the Corps. The Corps was now authorized to make general plans for all river basins in the United States except the Colorado (which was under the jurisdiction of the Bureau of Reclamation). And in the absence of directions to the contrary from Congress, it could make these studies in the order of its own notions of urgency. (The scope of its independence was to be further increased in 1935, when Congress empowered the Corps to bring completed 308 surveys up to date.) (119)

The 308 surveys were to take more than 20 years to complete, and provided much of the basis for water

resources development during the New Deal and post-World War II periods. (120)

The Bureau of Reclamation's new general authority to make examinations and surveys concerning multiple-purpose projects in the Colorado Basin paralleled its existing investigatory authority concerning irrigation improvements throughout the 17 Western States. But the Bureau was not given a parallel general authorization for construction of multiple-purpose projects. It was required to apply to Congress for authorization of the projects it would plan under the 1928 Act.

Efforts to Coordinate or Centralize Planning

The Employment Stabilization Act of 1931 established a Cabinet-level Federal Employment Stabilization Board to advise the President about unemployment situations requiring emergency appropriations for already authorized public works construction. This board was abolished in 1933 and its functions assigned elsewhere. (121)

The coordination function of the 1931 Act was very limited. The act's chief significance for water resources planning is that it required all Federal construction agencies to prepare and submit 6-year advance programs to the Director of the Budget. (122) The Director of the Budget was then required to report annually to the President consolidated plans and estimates for the next 6 years. (123)

The Federal 6-year advance program became, as we shall see, one of the chief elements of national planning during the New Deal and of executive branch review of agency programs in the postwar period.

Geographical Clienteles

In the 1920's and early 1930's, the chief impetus for water planning came from the communities that would be benefited, (124) although national ideological issues such as multiple-purpose development and public power continued to influence water planning. For instance, it is noteworthy that the chief advocate of development of the Tennessee River was Senator Norris of Nebraska.

Early examples of the tendency of agency-enabling legislation to encourage the organization of the public that the program was intended to serve were a 1922 reclamation law and a 1926 provision. The 1922 law authorized the Secretary of the Interior to contract with irrigation districts, as an alternative to contracting with individual water users. The 1926 provision made such district repayment contracts mandatory. (125)

IV. THE NEW DEAL IN WATER RESOURCES PLANNING, 1933-43

The Ideological Background

The first approach of the "New Deal" administration to water resources planning was based on the need for immediate action in the form of public works projects to stimulate construction industries and provide jobs for the unemployed. (126)

But New Deal planners insisted from the beginning that all water resources projects be related to and coordinated with plans for comprehensive development of entire river basins. (127) Such leading administration policy makers as Harold E. Ickes (Secretary of the Interior, Public Works Administrator, and chairman of the National Resources Board and its successor the National Resources Committee) were very intent on avoiding the accusation of maintaining a pork barrel composed of ill-planned, jerry-built projects. (128)

The New Deal inherited from the progressive movement a predisposition in favor of such policies as conservation, distrust of monopolies, promotion of public health and welfare, regulation of private enterprise in the public interest, and assistance to family-sized farms. (129) And these concerns to a large extent determined the nature and content of public works and other New Deal programs.

The New Deal also intensified the progressive desire to protect the public from the abuses of the "power trust" into an almost religious belief in the value of public water power development. Multiple-purpose projects involving public power operations were hailed as "experiments in democracy," combining regional economic growth with widespread distribution of benefits among the people. (130)

In addition, the New Deal progressed farther in its involvement with planning than the progressive movement had. Planning the development of natural resources was an old conservationist idea. But New Deal resources planning agencies purported to deal with "national" resources, a category including human resources and institutions as well as land, water, and minerals. New Deal planners were interested in conservation but they viewed natural resources planning primarily as an essential element of general economic planning, necessary to mitigate the effects of the depression, accomplish recovery, and prevent future depressions. (131)

As William E. Leuchtenberg points out, the FDR administration also greatly enlarged the progressives' concept of the responsibilities of the President to propose a national program. In the 19th century, Congress had been jealous of its prerogatives as the

lawmaking body and resented unsolicited advice from the Chief Executive. Presidents Theodore Roosevelt and Woodrow Wilson were innovators when they sent actual drafts of bills to Congress and used devices like the caucus to win enactment of measures they favored. But Franklin Roosevelt went much further. He sent special messages to Congress, accompanied them with drafts of legislation, wrote letters to committee chairmen or members of Congress to urge passage of the proposals, and authorized some of his assistants to lobby for administration measures on Capitol Hill. By the end of Roosevelt's tenure, Congress had come to expect the administration to present a detailed program for its consideration. The President had assumed a legislative role not unlike that of a prime minister. (132)

But Congress did not abdicate its function during the thirties. In title II of the National Industrial Recovery Act of 1933 (NIRA) and in the Emergency Relief Appropriation Act of 1935, it had given the President unprecedented public works planning powers because it had confidence in his apparently unique ability to deal with economic crisis. The recession of 1937 eroded that confidence, and the return of prosperity which followed Government investment in military preparations after 1940 made it unnecessary. (133)

Many Americans distrusted the concentration of power involved in economic planning. (134) Congress had long been hostile to the national resources planning organization, for reasons examined later in this chapter, and abolished it during World War II.

The Water Planning Agencies

Creation and Functions of New Agencies

The Tennessee Valley Authority (TVA). This unique Government corporation, created in 1933, is the only agency empowered to exercise all Federal functions in the development and management of water and related land resources within a geographical area. The TVA was given general authorization for the planning, construction, and operation of dam and reservoir projects for the primary purpose of navigation and flood control and also for operation of the projects for generation of electricity. Unlike the Corps of Engineers, it was required to obtain the approval of only one set of congressional committees, the Appropriation Committees of the House and Senate, before initiating construction.

The TVA was also authorized to sell electric power (giving preference to public organizations), regulate the rate of resale, build transmission lines to rural areas where needed, and promote the use of electric power for agriculture, domestic use, and regional economic development.

It was authorized to operate the Federal Government's World War I nitrates plant for fertilizer experimentation and production in time of peace and for munitions manufacture in time of war. (135) It also was involved in soil conservation and forestry programs, fish and wildlife improvement, recreation development, and elimination of malaria-carrying mosquitos by reservoir management. (136) And drawing heavily on the Corps of Engineers 308 survey of the Tennessee River, the TVA prepared a plan for multiple-purpose development of the river and its tributaries in a report published in 1936 and transmitted to the President and Congress.

National resource planning organizations. The four successive national planning organizations operating between 1933 and 1943 and discussed in this section were really the same agency, reorganized three times. (137) When Congress abolished the last of the four, the National Resources Planning Board in 1943, it instructed that the agency's functions not be transferred to any other agency.

The first of the four, the National Planning Board, was created in 1933 as a consequence of the National Industrial Recovery Act of 1933. Title II of this act created the Public Works Administration (PWA) and directed the Administrator to prepare a "comprehensive" program of public works for all sorts of purposes, including the full spectrum of water resources uses.*

Title II, "with a view to increasing employment quickly," also gave the President blanket authority to construct or finance any public work project included in the program (specifically excepting river and harbor improvements), and appropriated funds for this purpose. (138) Within a month of his own appointment, Administrator Ickes appointed the National Planning Board to advise him in the performance of his planning function.

The National Planning Board's chief water resources planning accomplishment was coordinating the work of the President's Committee on Water Flow. This committee's report contained multiple-purpose plans for 10

river basins, plans which were based primarily on Corps of Engineers 308 reports and Bureau of Reclamation surveys. (139)

Many of the river development projects included in the report were authorized by the President under title II of the NIRA and additionally authorized for navigation improvements in the 1935 River and Harbor Act. Among the better known projects authorized in this way were Bonneville, Central Valley, Fort Peck, Grand Coulee, and Parker Dams. The schedule for construction of Wheeler Dam by the TVA was also accelerated under title II. (140)

Another accomplishment of the National Planning Board with great significance for water resources planning was its stimulation and assistance to the formation of State planning boards. (141)

In June 1934, the National Planning Board was reorganized as the National Resources Board, an independent agency reporting directly to the President. Another former committee of the PWA, the Mississippi Valley Committee, became the Water Planning Committee of the new National Resources Board. (142) The Mississippi Valley Committee had just completed a pioneer, comprehensive river basin survey which included data on water supply and sanitation, erosion control, reforestation, wildlife, and recreation as well as the established "Federal concerns"—navigation, irrigation, flood control, and water power. (143)

In its December 1934 report, the National Resources Board recommended that studies of water projects for adoption by Congress be prepared on the basis of drainage basins as entire units and that they consider a great variety of water and land uses and controls. It also recommended detailed engineering, economic, and legal studies in 17 drainage basins. The accompanying report of the Board's Water Planning Committee emphasized the need for an inventory of water resources and brought together hydrologic data. (144) Eight regional monographs were prepared and issued as supporting documents. (145) Following the submission of these reports, the Board's Water Planning Committee attempted a first priority rating of construction projects. (146)

On the expiration of title II of the NIRA, the National Resources Board passed out of existence. To continue its work, the National Resources Committee (NRC) was established by Executive order, under the Federal Emergency Relief Appropriation Act of 1935. (147)

The most important achievement of the NRC's Water Resources Committee was a nationwide study of drainage basin problems and programs. The study contained recommendations for both Federal and State

*"Control, utilization and purification of waters, prevention of soil and coastal erosion, development of water power, transmission of electric energy, river and harbor improvements, flood control . . ." and specified drainage improvements.

development and was undertaken in cooperation with the new State planning boards. It was the result of the work of 45 drainage basin subcommittees, consisting of field representatives of Federal construction and research agencies and representatives of State and local governments. (148)

The Water Resources Committee also sponsored more detailed studies of particular river basins. In addition, a subcommittee on water pollution submitted a report showing the progress of State and local pollution control programs (as a result of PWA assistance) and advocating further progress under a policy of Federal loans, grants, and technical assistance.

The Water Resources Committee also collected information and carried out a "clearing house service for water storage and land drainage projects, P.W.A. water projects, flood control projects, and investigations." (149)

In 1936, the National Resources Committee assumed responsibility for annual revision of the Federal 6-year program established by the Employment Stabilization Act of 1931. This meant that the National Resources Committee annually reviewed and evaluated the 6-year plans of the Federal construction agencies. (150) It also began to aid the State planning boards in establishing among State and local agencies the practice of preparing and revising 6-year public works programs. (151)

When the Executive Office of the President was created in 1939, the National Resources Committee was reconstituted as the National Resources Planning Board (NRPB) and elevated to the role of planning division of the Executive Office. (152)

The NRPB was authorized to undertake research and analyze problems involving water (as well as other "national" resources) and to report plans and programs to the President and Congress. It was authorized to consult with Federal, regional, State, and local agencies in developing orderly programs of public works, to list them in order of their relative social importance,* and to act as a clearing house and means of coordination for planning activities on various levels of government and in various fields of planning. (153)

The NRPB was also authorized, jointly with the Bureau of the Budget, to develop and annually revise the Federal 6-year public works program. This program was to include a scheduling of priorities for the projects assigned for construction to each of the 6 years and was broadened to include the 6-year pro-

grams of agencies, like the Public Works Administration, which participated in construction indirectly, through loans or grants.

At the same time the NRPB was assigned joint responsibility with the Bureau of the Budget for executive branch review of all investigations and plans of the construction agencies and of all construction agency reports to Congress. (154)

Emergency Planning Agencies

Title II of the National Industrial Recovery Act of 1933 included an unprecedentedly large peacetime appropriation for planning and construction of public works. Charles and Mary Beard, writing in 1939, describe it as "the enormous sum of \$3,300,000,000." (155) Two years later, the Emergency Relief Appropriation Act of 1935 provided \$4,880 million for Federal work relief programs. And smaller but still substantial appropriations, intended primarily to provide jobs or work relief, were made every year until 1943. (156)

This emergency legislation strengthened the programs of existing planning agencies such as the Corps of Engineers, the Bureau of Reclamation, and the Bureau of Public Roads and provided the only legislative basis, apart from appropriations, for the activities of the national resources planning organization. It was also the basis for the creation of several new agencies. At least two of these emergency agencies, the Public Works Administration (157) and the Works Progress Administration (158) (later known as the Work Projects Administration), were important in water resources planning because of their financial support of State and local planning and of projects constructed by State, local, and Federal agencies.

An indication of the importance to State planning efforts of the New Deal program of Federal financial assistance can be seen in the collapse of many State planning boards soon after abolition of the program. (159) Another indication is supplied by a 1938 statement of the National Resources Committee. During the 5-year period 1932-37, the Committee noted, the total population served by sewage treatment works increased 73 percent and the number of treatment plans in the United States increased one-third. The NRC firmly stated that this extraordinary progress in water pollution control resulted from Federal financial aid. (160)

Public Works Administration. The PWA made loans and grants to State and local governments for the construction of municipal water works; municipal sewage disposal plants; and drainage, irrigation, flood

*That is, in the order of "(1) the greatest good to the greatest number of people, (2) the emergency necessities of the nation and (3) the social, economic and cultural advancement of the people of the United States." (Ex. Order 8248.)

control, and water power projects. Preference was given to works conforming to long-range programming and planning on the local, regional, and State levels.

The PWA also supplied planning consultants to State planning agencies, gave technical assistance to State and local planning agencies, and conducted demonstration projects on advance public works programming for a number of cities.

In addition, the PWA made planning and construction grants to Federal agencies for projects devoted to irrigation, navigation, water power, and flood control. (161)

Works Progress Administration (WPA). The WPA (continuing the program of its 1933-34 predecessor, the Civil Works Administration) supplied the payrolls for unemployed white-collar workers to staff the new State planning agencies. In addition, it supplied funds and personnel for research studies, basic data surveys, and engineering surveys sponsored by local planning agencies.

The WPA also provided workers and funds for construction projects sponsored and planned by State and local governments. Although WPA projects tended to be smaller than PWA projects, they included all the same types of water use and control projects. (162)

Extension of Functions of the Old Planning Agencies

The Corps of Engineers. In 1935, Congress authorized the Corps to supplement completed 308 surveys by additional studies where these were necessary "to take into account important changes in economic factors as they occur and additional stream-flow records or other factual data." (163) This authorization virtually amounted to continuing authority to undertake nationwide framework river basin planning, with the emphasis on navigation and, later, flood control.

Whereas previous Federal flood control efforts had been confined to specific areas, chiefly the lower Mississippi, the 1936 Flood Control Act inaugurated a national flood control program and assigned jurisdiction over Federal flood control investigations and improvements on the waterways to the Corps. But investigations of the watersheds and "measures for run-off, waterflow retardation, and soil erosion prevention" were assigned to the Department of Agriculture.

The 1936 Act also authorized numerous reservoir projects for navigation, flood control, and "other purposes" as well as preliminary investigations and surveys. (164) A large number of basin-wide flood control plans prepared under the authority of the 1936

Act were authorized for construction in 1938, following another series of catastrophic floods. The river basins included those of the Merrimack, Connecticut; Ohio, Upper Mississippi, Missouri, White, Arkansas, and Willimette Rivers. (165)

The 1937 War Department Civil Appropriation Act authorized the Secretary of War to provide additional storage capacity for domestic water supplies at flood control dams, providing that the cost of such increased capacity was contributed by the State or locality. Use of water for domestic supplies was required to be consistent with "federal uses and purposes." (166)

The Corps' approach to the development of hydroelectric power in this period was conservative. The Corps opposed the 1936-37 interagency recommendations of the National Power Policy Committee, National Resources Committee, Bureau of Reclamation, and Federal Power Commission. These recommendations favored Federal construction of transmission lines to major load centers to make effective the preference for sale of power to municipalities and cooperatives.

The Corps favored sale of electric power at the busbar to local electric utilities, and this point of view was incorporated in the conservative treatment of power benefits in its survey reports. (167)

Beginning in 1938, Congress in all flood control acts authorized the Secretary of War to install in dams facilities adaptable to future development of power on the recommendations of the Chief of Engineers and the Federal Power Commission. (168)

The Corps responded to this congressional directive by relying on the FPC for power market surveys, recommendations for installation of power facilities, and estimates of benefits attributable to such installation. Arthur Maass contended in *Muddy Waters* that the Corps was slow to accept the "optimum development" recommendations of the FPC. The result, Maass reported, was that at first Corps survey reports were frequently revised by making them sufficiently flexible to include greater or lesser power installations as desired in the future. (169)

The Bureau of Reclamation. Beginning in 1933, the Bureau of Reclamation was made an integral part of the Federal public works program. Not only was the Bureau's planning work coordinated with the drainage basin plans of the national resources planning organization, but construction of reclamation projects was financed by the PWA or by allotments from the Emergency Relief Acts of 1935 and 1937. Later in 1937, emergency public works funds became unavailable to The Bureau and it again became dependent on the Reclamation Fund and on general appropriations. (170)

In 1939, Congress passed the Reclamation Project Act, which authorized the Secretary of the Interior to plan and construct projects for multiple purposes in addition to irrigation. These included navigation, flood control, water power, municipal water supply, and other miscellaneous purposes. The 1939 Act provided that sales and leases of water power must give preference to municipalities and public agencies and to cooperatives and other nonprofit organizations financed by Rural Electrification Administration loans. (171) Although the act did not specifically authorize the Secretary to build transmission lines, such lines were included in reclamation projects in accordance with administration policy. (172)

In 1939 and 1940, Congress also authorized the Bureau of Reclamation to establish water conservation and utilization projects in the Great Plains and other arid areas of the United States. Congress provided that these projects be partially paid for by labor and supplies from the WPA and the Civilian Conservation Corps. The 1940 legislation also provided for participation, under cooperative agreement, of the Department of Agriculture. (173)

This authorization arose from a desire to provide assistance in rehabilitating people and land in the "dust bowl" and similar areas and to stem the exodus of thousands of dryland farm families. In these projects, it was accepted that the cost of irrigation was too great to be fully repaid if undertaken under reclamation law. (174)

The Department of Agriculture. The Agriculture Department was important in coordinating the water resources planning sponsored by the national resources planning organization. H. H. Bennett, the first chief of the newly created Soil Conservation Service (SCS), was a member of the Water Resources Committee. And field representatives of the SCS, the Forest Service, the Bureau of Agricultural Economics (the ancestor of today's Economic Research Service), the Bureau of Agriculture Engineering (the agency then responsible for swamp drainage projects), and other Agriculture agencies participated in the surveys of the 45 drainage basin committees. (175)

In addition, the Department of Agriculture began to take part in investigations of agricultural aspects of certain Bureau of Reclamation programs. The Department's participation in the water conservation and utilization project program has already been mentioned. It also took part in the Bureau of Reclamation's investigations, in the early 1940's, of the potentialities of the Columbia Basin for irrigation farming. (176)

The Soil Conservation and Domestic Allotment Act, which was enacted in part in 1935 and in part in 1936,

provided the basis for two programs of soil conservation on private lands with aspects of flood control, siltation control, and water conservation. These were (greatly simplified): (1) the Soil Conservation Service program of technical assistance to land owners in installing soil and water conservation practices, and (2) the agricultural conservation program providing payments to landowners for installing similar measures. (177)

The 1936 Flood Control Act gave the Agriculture Department jurisdiction over Federal investigations of flood control and related land management in watersheds and authorized investigations and surveys in specific localities. (178) A 1937 amendment extended this authorization to cover the watershed of all waterways previously authorized to be surveyed by the Corps of Engineers. (179)

But the 1936 and 1937 Flood Control Acts did not authorize any works of improvement. Although 1938 legislation gave the Secretary of Agriculture general authority to improve the watershed of waterways on which Corps of Engineers improvement works had been authorized, this general authority was never used and no "small watershed" projects were built during the New Deal period. (180)

The Water Facilities Act of 1937 authorized the Secretary of Agriculture to plan and construct agricultural water storage and utilization projects in the arid and semiarid areas of the United States. These projects could be located on federally and privately owned land. In the latter case, the projects were financed by loans from what was then the Farm Security Administration. (181)

The Federal Power Commission. The FPC (which in 1930 had been reorganized into an independent agency) had a larger part in water resources planning during the New Deal than in the decade which preceded it.

In 1935, Congress gave the Commission authority to make investigations concerning the generation, transmission, and sale of electric energy as a basis for recommending legislation. (182)

Beginning in 1938, as already noted, the Corps of Engineers was required to consult the Commission concerning the desirability of installing penstocks and similar facilities for the future development of water power in all flood control dams.

Perhaps as significantly, the FPC was represented on both the national-level Water Resources Committee and the 45 drainage basin committees of the National Resources Committee and the National Resources Planning Board. (183) This was the beginning of FPC participation in the river basin planning of interagency

committees as the agency primarily responsible for determining the economic feasibility of water power development.

Interagency Coordination in Planning

Executive branch efforts to promote interagency coordination of water resources planning began with the 1933-34 report of the President's Committee on Water Flow. This Cabinet-level committee—consisting of the Secretaries of Agriculture, War, Interior, and Labor—worked through six technical subcommittees including representatives from the Departments of War and the Interior, and the FPC. Coordinating and administrative work was done by the National Planning Board (NPB). (184)

The National Planning Board itself consisted of three nonaligned “experts,” Frederic A. Delano, uncle of the President and an experienced city planner, and Charles E. Merriam and Wesley C. Mitchell, who had been chairman and vice chairman, respectively, of President Hoover's Committee on Social Trends. (185)

When the NPB was reorganized in 1934, the Secretaries of the Interior, War, Agriculture, Commerce, and Labor and the Federal Emergency Relief Administrator also became members. However, the members of the new Board's Water Planning Committee were the nonaligned experts who had composed the Mississippi Valley Committee of the Public Works Administration.

A year later, when the National Resources Board was reorganized as the National Resources Committee with much the same memberships, its Water Resources Committee was broadened to include representatives of the Department of Agriculture, the Corps of Engineers, the Bureau of Reclamation, the Geological Survey, the FPC, the TVA, and the Public Health Service. (186)

The work of interagency and intergovernmental drainage basin subcommittees in preparing nationwide framework plans in 1936 and 1937 has already been discussed. Representatives of concerned Federal agencies also served on the Water Resources Committee's technical subcommittees, such as its Special Advisory Committee on Water Pollution and its Special Advisory Committee on Hydraulic Data. (187)

The national-level Water Resources Committee, the 45 drainage basin committees, and the special advisory committees were all inherited by the National Resources Planning Board when the Executive Office of the President was established in 1939. (188)

The National Resources Planning Board itself was no longer an interdepartmental Cabinet-level com-

mittee, but consisted only of three unaligned members—Frederic Delano, Charles E. Merriam, and George F. Yantis. (189) However, in August 1939, the NRPB induced the Departments of War, the Interior, and Agriculture to join in the so-called “Tripartite Agreement” to provide for interagency consultation in the preparation of river basin surveys. (190)

Water resources planning legislation in this period contained few provisions for interagency coordination. The Flood Control Act of 1936, which divided flood control jurisdiction between the Corps of Engineers and the Department of Agriculture on functional and geographical bases, contained no provision for consultation between the two agencies or with any others. The 1938 provision for Corps-FPC consultations concerning installation of water power facilities in flood control dams was an exception to this rule which has already been discussed.

The 1939 Reclamation Project Act did provide that, where part of the cost of a reclamation project was allocated to flood control or navigation, the Secretary of the Interior must consult with the Chief of Engineers and the Secretary of War and include the views and recommendations of the Secretary of War in his report to the President and Congress. Moreover, he was authorized to perform any of the necessary investigations and studies under a cooperative agreement with the Secretary of War. (191)

Development of Planning Procedures

Integrated River Basin Planning

During the New Deal period, two parallel efforts in multiple-purpose river basin planning took place. One was the “308 surveys” that Congress had instructed the Corps of Engineers to undertake in 1927 and to update and continue in 1935. The 308 investigations included data concerning navigation, water power, flood control, and irrigation.

The other planning effort was that of interagency and intergovernmental teams led by the national resources planning organization. Their investigations included, in addition to the data authorized by the 308 surveys, data on stream pollution and pollution abatement, municipal water supplies, soil erosion and reforestation, land drainage, malaria control, beach erosion, recreation, wildlife conservation, and significant aspects of local economies and institutions. (192)

In addition, the Tennessee Valley Authority Act of 1933 established a single agency with authority for comprehensive planning of water and related land use

in a single drainage basin. However, a 1937 proposal by President Roosevelt to create seven similar regional resources planning authorities was rejected by Congress. (193)

Advance Programming

Although they inherited the "causes" of progressive conservationists, New Deal planners were less urgently interested in individual project objectives than in public works planning. Their primary planning objective was to maximize the benefits of limited congressional public works appropriations. And one of the principal methods chosen to accomplish this was advance programming. (194)

As already noted, the Federal Employment Stabilization Act of 1931 had required all Federal construction agencies to annually prepare and submit to the Bureau of the Budget 6-year advance programs of authorized public works.

The experience of the Public Works Administration in 1933 showed deficiencies in advance preparation of engineering plans and long-term capital budgets by both Federal agencies and local governments. The 1934 report of the National Resources Board recommended a new effort to plan for public works 6 to 10 years in advance. The Board recommended that projects be cleared through a central agency and that State planning boards be invited to prepare 6-year advance programs of their own public works. (195) At the same time, the Board proceeded with the work of compiling lists of proposed public works, showing those which should be given priority. (196)

The Water Resources Committee's 1936-37 report on drainage basin problems and programs included 6-year programs of recommended investigations and construction for each basin. (197) The 1937 report, in supporting the importance of advance programming, noted that water projects accounted for 40 percent of the public works program in the President's budget recommendations for 1939. (198)

In 1936, the President assigned the responsibility of annually revising the Federal 6-year program to the National Resources Committee. This function was inherited by the National Resources Planning Board. (199)

Executive Order 8455 of June 1940 instructed Federal agencies to submit 6-year advance programs to the NRPB and the Bureau of the Budget jointly, for evaluation from both a budgetary and a planning point of view.

The National Resources Planning Board instructed cooperating agencies to list authorized projects in a

priority order based on comparative urgency, efficient timing, social utility, relationship to integrated river basin plans, and economic soundness.

After review by the NRPB, plans for agency programs were transmitted to the Bureau of the Budget, which passed on all aspects of project priority in preparing the annual Federal budget. (200)

Economic Evaluation of Projects

Although the pre-New Deal enabling legislation of the water resources planning agencies had consistently required that reports to Congress recommending projects demonstrate the projects' economic value, (201) the modern period of economic analysis of project value began during the New Deal. However, because of the attention paid by the executive branch to integrated regional and river basin planning and to programming public works in order of urgency, benefit-cost analysis did not become the principal basis for agency project recommendations until the postwar period.

Benefit-cost analysis. The widespread use of benefit-cost analysis to test a project's worth is generally considered to have grown out of section I of the Flood Control Act of 1936. (202) This section provided that "... the Federal Government should improve or participate in the improvement of navigable waters or their tributaries including watersheds thereof, for flood control purposes *if the benefits to whomsoever they may accrue are in excess of the estimated costs...*" (203)

Although the statutory directive applied specifically only to flood control improvements by the Corps of Engineers and the Department of Agriculture, it was soon adopted by all the water planning agencies for all water resources purposes and by the Water Resources Committee of the national resources planning organization. Each agency, however, adopted different and indeed inconsistent criteria for estimating benefits and costs. (204) As benefit-cost analysis developed, the Water Resources Committee became concerned that all planning agencies give adequate attention to "social benefits as well as economic benefits, general benefits as well as special benefits, potential benefits as well as existing benefits." (205)

A 1941 report of the National Resources Planning Board recognized two general categories of benefits and costs—tangible and intangible. Intangible benefits were those that were not easy to measure in monetary terms, such as life saving and recreation. Two types of tangible benefits and costs—direct and indirect or secondary—were recognized. Direct benefits in this

period were considered to be the product or service the project was intended to supply. The most important indirect benefits were construction jobs for the unemployed and stimulation of private enterprise by public works spending.

This 1941 report drew attention to some inconsistencies among agency methods of estimating benefits and costs, and advocated cooperative studies to develop uniform interagency methods. However, the report revealed that the principal concern of the Water Resources Committee was that all agencies should give adequate attention to indirect and intangible benefits in considering specific water projects. The report recommended the development of "standard methods of social accounting" to provide a dollar basis on which to evaluate such benefits. (206)

Cost allocation and repayment of costs. Another approach to the economic justification of projects, in which the national resources planning organization was equally interested, was the willingness of project beneficiaries to pay for benefits received.

The same 1941 NRPB report included the report of the Water Resources Committee, which set forth its point of view on responsibility for costs as follows:

"As a general principle costs should be repaid as far as practicable by the beneficiaries, with due consideration for the amount of benefits received. To this principle there will be two qualifications . . . provision of special aid to economically distressed areas . . . and special aid to depressed social groups.

"Recommendations should be made at the planning stage of any large project for the distribution of its ultimate cost among Federal, State and local political units, and the appropriate groups of private beneficiaries. On multiple purpose projects, provision should likewise be made in advance for the allocation of joint costs among the several purposes." (207)

Most Federal projects in this period had some provision for at least partial repayment of benefits, either in the form of the purchase price of project products (such as water supplies or power) or of local government contributions.

The local contributions requirements of both the navigation and the flood control programs of the Corps of Engineers were criticized (ineffectively) by the national resources planning organization as not reflecting the degree of benefit conferred.

Since 1920, the Chief of Engineers, in making rivers and harbors reports to Congress, had been required to state the expected local benefits and to recommend an appropriate degree of local cooperation. In practice, this cooperation was limited to the provision in some cases of lands, rights of way, and terminals. By long-

established tradition, supported by both Congress and the Corps, there was no provision for repayment of any part of the capital costs of a navigation project by tolls. The waterways were regarded as free public highways. This meant there was no contribution to the cost of providing the waterways by the carriers or by the petroleum, coal, and iron ore industries who were the major shippers. (208)

The 1936 Flood Control Act also limited local contributions to lands, easements, and rights of way totaling up to half of the project cost. And following the floods of 1937 and 1938, even this degree of local cooperation was abandoned, by 1938 amendment, with respect to reservoir, channel improvement, and channel rectification projects. Local contributions according to the formula of the 1936 Act were subsequently required only for the construction of levees and floodways. Beginning in 1941, such contributions were again required for channel improvements but not for reservoir projects. (209)

The ideological principle underlying these policies was and is the belief of Congress and the Corps that the benefits of flood control reservoirs and navigation improvements—unlike, for example, the benefits of municipal and industrial water supplies or power—are "widespread and general." The specific beneficiaries are thus considered unidentifiable and it is appropriate for the general public to pay the bill. (210)

However, it had been well established since the Reclamation Act of 1902 that irrigation water users must repay the capital cost of irrigation projects. The periods of repayment had been gradually increased from 10 to 40 years. Repayment ability (qualified by the New Deal policy of subsidizing depressed rural economies) was regarded as an index of the economic value of projects. It was regarded as a good measure since it reflected construction costs, availability of water, fertility of soil, and other factors which have a bearing on the comparative utility of projects. The interest subsidy was widely regarded as justified because of the national interest in the social objectives of the program, although the Water Resources Committee considered that it might be reexamined. (211) In any event, it was a smaller subsidy than that provided for beneficiaries of navigation and flood control projects.

The 1939 Reclamation Projects Act authorized the Secretary of the Interior to set a 10-year development period before repayments were to begin, to investigate the repayment problems of existing irrigation water contracts and negotiate a longer repayment period where equitable, and to permit variable payments based on the productivity of the land.

The 1939 Act also provided for charging portions of construction costs to multiple purposes in addition to irrigation, where appropriate, and set forth a new repayment formula as the statutory basis for economic justification of projects.

This formula provided that the Secretary could allocate construction costs attributable to navigation and flood control to the Federal Government (since such costs were also nonrepayable in other Federal projects). Costs allocated by the Secretary to irrigation, water power, municipal water supply, and other purposes are repayable and must be "probably returnable." If the Secretary finds the project to have engineering feasibility, and if the repayable and returnable allocations together with any nonrepayable allocations equal total project cost, the project is authorized and may be undertaken after submission of reports to the President and Congress. (212)

Reclamation law after 1906 and flood control law after 1937 permitted the inclusion of municipal and industrial water supply storage in Federal reservoirs provided that such an arrangement did not interfere with the recognized, Federal purpose of the project. The construction cost of such inclusion must be fully repaid by the local interest to be benefited. (213)

The Federal Government evidently considered that it had no "jurisdiction" in the provision of municipal and industrial water comparable to its jurisdiction concerning navigation, irrigation, flood control, hydro-power, and even such new concerns as soil conservation and stabilizing the population and economy of areas which suffer periodically from drought. Nonetheless, the New Deal administration did include State and local governments—which had such jurisdiction—in drainage basin planning efforts. And the PWA gave financial aid to State and local planning and construction of water works as part of its nationwide public works program.

Powers of the Executive and Legislative Branches

Despite the transfers of power to executive agencies in 1902 and 1920, at the beginning of the New Deal most aspects of water resources planning were vested in Congress, as the initiator and supervisor of the work of the Corps of Engineers. The Corps planning work was set up so that Congress made decisions regarding not only general policies of water resources development, but also the choice, timing, and extent of Federal investment in individual projects.

Congress as a whole was not equipped to exercise direct control over the civil functions of the Army

Engineers. Rather, this was done by the House and Senate committees responsible for the Corps enabling legislation and the subcommittees responsible for its appropriations. (214)

One procedure much used in this period and subsequently was the committee review resolution, to require the Corps to reconsider reports judged unfavorable. A 1935 National Resources Board manuscript, which Arthur Maass quotes in *Muddy Waters*, reveals that only about one-third of the projects authorized in the 1935 Rivers and Harbors Act originated as favorable reports to Congress. Most of the others were modified by the Corps on review under committee resolution (usually by expansion in scope or reduction in local contribution). The review resolution procedure constituted a kind of committee legislation, binding on an executive agency; and unlike the original authorization legislation, it could not be vetoed. (215)

The Corps was also made responsible, by its Orders and Regulations, to the individual Member of Congress who sponsored a local improvement in his district. The District Engineer was initially required to contact the Member of Congress to determine the scope of the desired improvement and the interested parties. The Congressman or Senator was invited to testify at the public hearing in the locality that was part of the preliminary examination procedure. He was the first to be informed of any change in the status of the investigation, and was invited to present written arguments to the Board of Engineers for Rivers and Harbors and to request a hearing if unsatisfied with the Board's initial decision. (216)

Furthermore, if unsatisfied with the Corps' report, the sponsoring Congressman could probably secure a review resolution. And, when hearings were held by congressional committees on favorably reported projects to be included in omnibus rivers and harbors and flood control bills, the testimony of Members of Congress from the district in which projects were located was usually corroborated and supplemented by the representative of the Corps present at the hearings. (217)

For these reasons, individual Congressmen as well as particular congressional committees had a special interest in the Corps. They considered the President's attempts to subordinate its planning activities to coordinated executive branch plans and policies to be usurpations of congressional power.

Congress had some reason to view the water resources planning activities of the national resources planning organization as intended to countervene its authority since, as already noted, it had recently given parallel, if less comprehensive, responsibilities to the

Corps. Furthermore, in 1935-36, Congress had rejected administration bills to create a permanent national resources planning agency similar to the National Resources Board. And the President had responded by continuing to make use of ad hoc national planning agencies created by Executive order. (218)

Nevertheless, until 1943, the administration was able to persuade Congress to appropriate funds for the national resources planning organization under public works and emergency relief authorizations. (219)

In January 1937, the President attempted to include a permanent "National Resources Board" in proposed executive reorganization legislation. (220) The reorganization law finally passed in 1939 contained no provision for a planning board, although it did provide that the President could not transfer away any Corps of Engineers functions. The principal provision of the 1939 Reorganization Act was that the President should prepare and transmit to Congress reorganization plans for the executive branch which would take effect if not rejected by joint resolution of Congress. (221) Reorganization Plan II, which created both the Executive Office of the President and the National Resources Planning Board, was not so rejected.

The President's long struggle to obtain permanent status for a national resources planning organization ended in 1943. In that year, Congress not only refused to appropriate money for the National Resources Planning Board but provided specifically that it be abolished and its functions not be performed by or transferred to any other agency.

This decisive congressional action was taken despite the President's personal appeal to retain the agency for postwar planning. It was accomplished, in part, by the efforts of the bipartisan, congressional Rivers and Harbors bloc who wished to see the Corps put in charge of preparing advance plans for postwar projects. Also instrumental were conservatives alarmed by the Board's "human resources" planning in such areas as social security and fiscal policy. (222)

Another administration attempt to bring water resources planning under executive branch control was the President's 1937 message on regional conservation authorities. The President proposed dividing the country into eight major drainage areas for the purpose of planning (and in the case of the Tennessee, Columbia, and Mississippi Valleys, managing) the conservation and use of water and related land resources. The permanent national planning board, when established by Congress, would coordinate the development of regional planning to ensure conformity with

national policy. (223) House and Senate bills to effectuate the President's proposal died before reaching the floor. (224)

Most nongovernment witnesses testifying against the bills in committee hearings apparently were opposed to Federal water power operations or were concerned that navigation interests might be adversely affected. In either event, they expressed confidence in the Corps of Engineers and unwillingness to see any undermining of its responsibilities. (225)

Major General Julian Schley, the Chief of Engineers, testified against the legislation as interfering with the relationship of the Corps to its congressional committees and to the "grass roots" interests represented by Congressmen sponsoring projects in their districts. (226)

Geographical Clienteles

Cooperation with local governments and encouragement of local participation in federally sponsored programs was one of the tenets of New Deal water resources planners, just as it was of New Deal agricultural programs. And title II of the NIRA gave Federal authorization and funds to a number of long-desired, locally inspired programs including the Central Valley and Grand Coulee projects and the Muskingum Watershed Conservancy District project. (227)

Nonetheless, although never lacking in local supporters, the policies of the national resources planning organization were usually based on national, ideological concerns. During the New Deal, regional economic development based on the low rates of Government-generated electricity became part of a national ideology of planning, just as providing irrigation water for 160-acre farms in the West had been part of a national progressive ideology in 1902.

Furthermore, despite the efforts of the national resources planning organization to encourage State and local participation in regional planning and to consider multiple purposes of interest to many interest groups, executive branch plans frequently encountered the opposition of local interest groups.

Part of the reason for this local opposition was inherent in the greater geographic scope and variety of purposes of river basin plans. As long as water resources projects were limited to navigation and local flood protection works (the traditional program of the Corps), benefits accrued at the site of the projects. No one appeared to be hurt except, in the case of navigation projects, the railroads. But multiple purpose reservoirs threatened locally based utility companies,

farmers whose lands would be flooded to provide flood protection for cities, rural real estate interests and influential local sportsmen's clubs whose members preferred unspoiled rivers to flood control or power development.

In contrast, the single-purpose projects sponsored by the Congressman of a district for construction by the Corps of Engineers were usually locally popular. Corps projects generally required smaller local contributions. Municipal, county, water district, and State officials; local industries; and local and Statewide organized interest groups all testified at the hearings conducted by the District Engineer and the Board of Engineers for Rivers and Harbors. And although the Corps had its own set of river basin plans, it was willing to modify them in response to concerns of local

Congressmen and State and local officials and interested groups. (228)

The national resources planning organization, the administration, and New Deal Congressmen (such as the proponents of the Connecticut Valley Authority) often appeared to the locality as unwilling to compromise ideological positions that had little local support. And New Deal agencies, such as the Bureau of Reclamation in its planning for the Kings River in California, were often not supported locally because of project requirements concerning repayment contracts, acreage and speculation limitations, integration with wider regional plans, and Federal development of hydropower for the purpose of regional economic development, rather than private development, to repay project costs. (229)

V. CONGRESSIONAL CONTROL OF PLANNING AGENCY PROGRAMS, 1943-60

The Ideological Background

After the abolition of the National Resources Planning Board, the development of Federal water resources planning resulted from a diversity of interests, points of view, and ideologies. During the New Deal, ideological conflict over water resources development had been relatively straightforward, consistent with ideological conflicts concerning other aspects of domestic policy and with national party politics. New Deal supporters generally favored public works jobs for the unemployed, Federal water power development, aid to depressed or underdeveloped rural areas and to agriculture generally, and economic and natural resources planning. Opponents were hostile to deficit spending, large Government payrolls, and Federal competition with private enterprise.

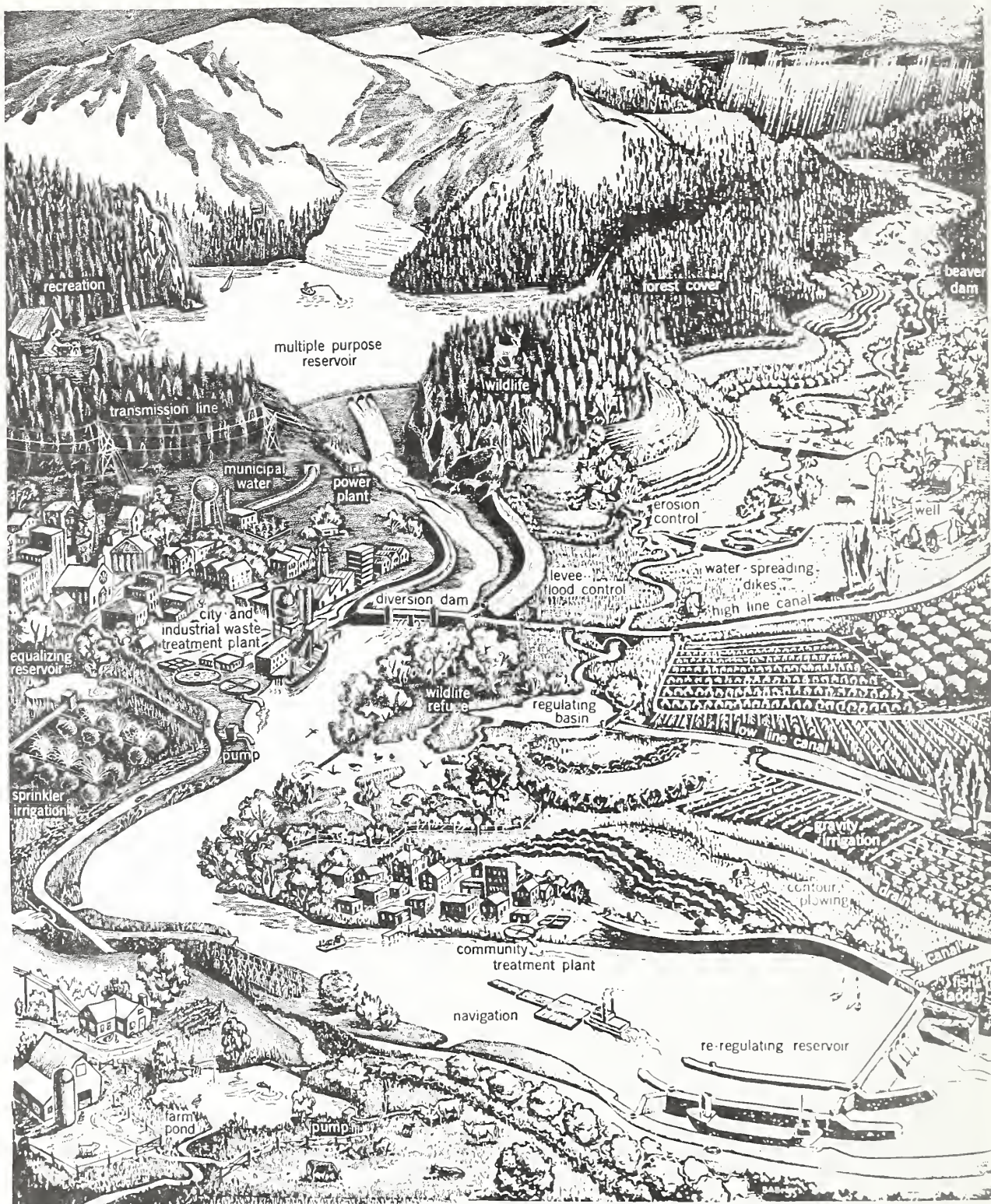
The Truman administration inherited the ideological concerns of the New Deal (as shown, for example, in its unsuccessful proposals for a Missouri Valley Authority and a Columbia Valley Authority) and tried to implement them, at least until the onset of the Korean war. (230) And when President Eisenhower announced his "partnership policy," he raised anew the standard of opposition to Federal power development and subsidy of regional economic development. (231) But, except where it was supported by local interests, this national, ideological division of opinion had relatively little effect on the development of water resources in the 1940's and 1950's.

After the abolition of the National Resources Planning Board, the executive branch no longer had the

organizational capability either to prepare overall water resources plans or to evaluate the merits of plans proposed by the construction agencies. The creation of new water programs became increasingly the exclusive concern of the congressional committees responsible for agency-enabling legislation and appropriations. (232) Each of the construction agencies developed a strong liaison with its own congressional committees and an independent ideology, based on its history, its jurisdiction, and the interests of its own geographical clientele.

Thus, the Corps of Engineers was motivated by belief in the importance of carrying out the needs of localities in providing structures adequate to deal with catastrophic floods. The Bureau of Reclamation believed in the importance to the Nation of regional economic development in the West. The Soil Conservation Service favored the maximum amount of planned watershed protection, from the point of view of the importance to the Nation of agricultural soil and water conservation. (233)

In this situation, congressional sponsorship of agency programs tended to be based neither on national party loyalties nor on political philosophies. Both liberal and conservative Congressmen usually favored the projects that would benefit their constituents. Congress as a whole was inclined to think that the ultimate decisions on public works projects should be made by the congressional delegation of the district. For this reason, legislation sponsored by Senators and Congressmen of the project area seldom encountered



A Multiple-Purpose River Basin Development

(Reprinted from *A Water Policy for the American People*, The Report of the President's Water Resources Policy Commission, 1950.)

effective opposition, unless there was substantial local opposition to the project. (234)

Many factors operated to increase the number of construction projects during the forties and fifties. The 1944 Flood Control Act authorized an unprecedented number of projects, with the thought that there might be a resumption of mass unemployment after the end of the war, and appropriations were made for construction of these projects throughout this period and into the 1960's. (235) The Soil Conservation Service joined the Corps of Engineers, the Bureau of Reclamation, and the TVA as the fourth construction agency. Critics of construction agency programs contended that the absence of any overall national planning policy (other than the necessity that the benefits of any project must exceed the costs) or of any set of national public works priorities became an invitation to "log rolling." (236)

In any event, the programs of all of the construction agencies expanded much more during the 1940's and the 1950's than they had during the much publicized public works programs of the 1930's. (237) And this occurred despite the little national interest—apart from sympathetic reaction to flood catastrophes—in water development construction projects in this period. The end of mass unemployment, the decline of farm population, and the growth of urbanization, suburbia, and megalopolis, all tended to divert national attention from public works programs intended to benefit rural and smaller urban areas.

In addition, the postwar period saw national political attention sharply focused on issues involving defense and foreign policy. It is probably not too much to say that during the early and middle 1950's (except for inflation up to the end of the Korean war) there was little national political interest in any domestic issue that was unrelated to the cold war. (238)

But toward the end of the 1950's, certain water resource issues began to attract more than local public attention. These were not the issues of national politics (economic development and public power vs. private enterprise and economy). Neither were they the issues—benefit-cost analysis, equitable cost allocation, and efficiency of institutional arrangements—that were the subject of both the extensive literature of water planning produced by social scientists and other professionals during this period (239) and the reports of official study commissions. (240) They were environmental issues of interest to an urban and affluent society.

Before World War II, an appreciation of the scenery, wildlife, and outdoor recreation potential of water resources was the distinctive mark of the upper class nature enthusiast who was frequently opposed to reser-

voir projects of obvious benefit to large numbers of people. (241) After World War II, full employment, the 40-hour workweek, the paid vacation, and the growth of automobile ownership led to the age of mass interest in outdoor recreation. (242) In this situation, the 1955 objection of the Sierra Club to Echo Park Dam attracted massive national support that Congress felt compelled to recognize. (243) In 1958, Congress passed the Outdoor Recreation Resources Review Act, which provided for a nationwide inventory and evaluation of outdoor recreation facilities and needs. (244)

Meanwhile, the growth of population, affluence, and technology had created new city water supply problems. In the arid West, attainment of new sources of city water became an environmental and economic development issue of great importance in State politics. But eastern cities, too, were now suffering from periodic "droughts."

Congress responded to the as yet barely articulated urban demands for help with city water shortages, within the limits of existing notions of Federal and construction agency jurisdiction. The Water Supply Act of 1958 made storage for future municipal and industrial water supplies an equal purpose in the planning of multiple-purpose reservoirs by the Corps of Engineers and the Bureau of Reclamation. State or local interests were still required to give reasonable assurance that such storage would be used and, when used, paid for. (245)

In the East, more political interest was generated by water pollution. As reform-minded urbanites became aware of the extent of pollution and the inadequacy of State and local controls, they began to ask for more Federal regulation and assistance to State and local programs. Industrial interests gave their views opposed to Federal regulation. The Eisenhower administration, consistent with its other policies concerning the limits of Federal financial responsibilities, opposed Federal subsidies to municipal sewage treatment plant construction. But since pollution is an almost uniquely unattractive political standard, no economic concern or interest could persuade politicians to rally to it. As the arguments of the proponents of environmental values began to attract more public attention, Congress became increasingly responsive to their demands. (246)

The Water Planning Agencies

Development of Programs of the Old Planning Agencies

The Corps of Engineers. As the agency with the widest geographical jurisdiction, the Corps continued

to be the leading construction agency in the water resources field. More than half the appropriations made for planning and construction in this period were allocated to the Corps. (247) Flood control became the agency's most important function. The navigation improvements program was relegated to second place. (248)

The Flood Control Act of 1944 (249) became the Corps' governing policy statement. The act authorized the Pick-Sloan plan for coordinated development of the Missouri River Basin by the Corps and the Bureau of Reclamation. It set forth a statutory procedure for future coordination of plans with the Bureau of Reclamation and with State governments. And, as an additional item in its compromise of jurisdictional disputes between the Corps and the Bureau, the act divested the Secretary of War of his authority to market electric power produced at Army dams. This responsibility was given to the Secretary of the Interior, who was also authorized to build transmission lines.

The 1944 Act also authorized a great number of projects in numerous river basins "with a view toward providing a reservoir of useful and worthy public works for the post war construction program." It defined the Corps' jurisdiction over flood control works to include "channel and major drainage" improvements. And it authorized the Chief of Engineers to construct, maintain, and operate public park and recreation facilities "in connection with" Army reservoir projects and to license land and facilities for recreation purposes, preferably to public agencies. The act declared that the water areas of such reservoirs should be open to the public for recreation use without charge. But it did not give scenery or recreation any value in benefit-cost evaluation.

The Flood Control Act of 1958 initiated a program of tidal water flood control by authorizing several hurricane protection projects. (250) However, municipal and industrial water supplies was the area in which the Corps' program was to change most significantly in the 15 years following the Act of 1944. The 1944 Act had merely permitted the sale of "surplus water" at Army reservoirs, providing the contracts did not interfere with "then existing lawful uses of such water." The 1950 Flood Control Act provided that the interagency and intergovernmental surveys led by the Corps in the Arkansas, White, and Red Basins should specifically include municipal and industrial water supplies and pollution abatement as planning purposes. (251)

The 1958 Water Supply Act (252) declared it to be Federal policy to aid States and localities by providing storage for present and future municipal and industrial

water supplies in Federal reservoirs. Most significantly, the 1958 Act provided that the value of such water supplies be included in the economic justification of such reservoir projects.

In the late 1950's, the Corps led interagency and intergovernmental planning efforts in the Delaware Basin. Here, urban water supply and pollution control were recognized as the principal planning concerns. However, these plans did not allocate responsibility for construction of works to the Corps unless the works also had capability for navigation improvement or flood control. (253)

The Bureau of Reclamation. The 1944 Flood Control Act also became important in Bureau of Reclamation program development. It authorized the Bureau's share of the Pick-Sloan plan, the largest river basin project that the Bureau had as yet embarked on. (254) It also provided generally that the Corps of Engineers must make some accommodation to Interior's geographical and functional jurisdictions.

Perhaps of equal significance, section 1 of the 1944 Act gave Congress, not the executive branch, responsibility for coordinating the work of the Corps and the Bureau. Section I provided that, west of the 98th meridian, the Secretary of the Interior and the Chief of Engineers must submit planning reports to each other and to the "affected states" for review prior to submission to Congress. If either the Secretary of War (now the Secretary of the Army) or any of the States submit objections to the plans of the Secretary of the Interior, the plans cannot be authorized without a specific act of Congress. (255)

Section 8 of the same law provided that henceforth the Secretary of the Interior would be responsible for constructing and operating irrigation works using water stored at Army reservoirs. But this type of construction also had to be authorized by specific act of Congress. (256)

The 1944 Flood Control Act was one factor that led the Bureau of Reclamation to discontinue using the authority of the Secretary of the Interior, under reclamation law, to authorize large projects. Virtually all reclamation projects (as opposed to investigations) were subsequently authorized by Congress. (257)

Another series of events that probably had the effect of strengthening the ties of the Bureau with the congressional committees responsible for its enabling legislation, rather than with the executive branch, concerned the Columbia Basin. In 1943, Congress passed the Columbia Basin Project Act, which authorized the Bureau's irrigation development program.* In the late

*57 Stat. 14, 16 USC 835-835i. This act was intended to aid settlement of returning veterans on family-sized farms. It con-

1940's, both the Bureau and the Corps prepared reports on the long-range development of the Basin. The Bureau's plan featured a high dam at Hell's Canyon on the Snake River. At President Truman's request, the two agencies prepared a coordinated report. The President asked Congress to use this as a basis for creating a Columbia Valley Authority. When this proposal was rejected, he asked for joint development of the Basin by the Corps and the Bureau. But this request was also rejected and Congress authorized only the Army portion of the plan. (258)

With the 1953 change of administration, there was a shift in executive branch policy on power development to the effect that private enterprise, when financially capable of doing so, should undertake all facets of development. In early 1953, the Interior Department withdrew its opposition to private construction of low dams on the Snake River. The FPC granted a license to the Idaho Power Company despite its finding that a high dam at Hell's Canyon could produce more electricity at a considerably lower cost per kilowatt hour. The license was granted on the grounds that the lower cost of proposed Federal development was solely the result of Federal credit and tax advantages and should be disregarded. There was considerable congressional and local opposition to this decision, and support for a reclamation high dam for the purpose of lowering domestic electric bills and promoting regional industrial development. But there was also considerable congressional and local opposition to the high dam (including opposition of State governors and State and national officials of the National Reclamation Association and of business and farm organizations). The Hells Canyon project bill did not pass. (259)

With respect to power development at Federal multiple-purpose projects, President Eisenhower's "partnership policy" meant that the Federal Government should provide the multiple-purpose features, such as storage dams, while non-Federal sources developed the power head. In 1955, Congress authorized this approach as an alternative arrangement for the Trinity River Division at the Central Valley Project. But in 1959, Congress rejected this alternative by appropriating money for Federal construction of the power plant. (260)

Congress also rejected the partnership principle in authorizing the great Colorado Storage Basin Project in 1956. It is noteworthy that the Eisenhower administration did not actively oppose this project, which

required large Federal investments in power development to repay the cost of irrigation benefits. (261)

The Small Reclamation Projects Act of 1956 authorized the Secretary of the Interior to contract with local organizations to provide financial assistance for the construction and rehabilitation of small irrigation systems which may include multiple-purpose functions. Loans can not exceed \$5 million out of a total project cost of \$10 million, and are subject to the same repayment conditions as Reclamation Projects Act projects. However, the acreage limitation provision of the Small Projects Act is less stringent. Loan money is available for irrigation of lands in excess of 160 acres in one ownership. But interest is charged on the portion of the loan allocated to the irrigation of excess acreage. Grants are limited to the nonreimbursable functions of the project. (262)

Like the Corps of Engineers, the Bureau of Reclamation in the 1950's became increasingly active in planning for municipal and industrial water supplies. This activity was concentrated in its southwestern District No. 5. (263)

The Canadian River Project in Texas was authorized in 1950. While it has substantial irrigation features, its primary objective is to deliver municipal and industrial water to cities in the Texas panhandle. (264)

The Norman Federal Reclamation Project in Oklahoma was authorized in 1960. This project has no irrigation or power features at all. Its principal purpose is to store water for municipal and industrial uses and for flood control. Its additional purposes are conservation and development of fish and wildlife and recreation. (265)

The Department of Agriculture. The Flood Control Act of 1936, as amended in 1937, had given the Department of Agriculture authority to make preliminary examinations and surveys in the watershed of all waterways in which Corps of Engineers surveys were authorized (that is, in the watersheds of all rivers except the Colorado). But, in part because of World War II, the Department was not quick to make use of this authority. By 1954, when the Department's planning authority under flood control law was superseded by Public Law 566, it had sent to Congress only 26 detailed surveys and the Missouri Basin Agriculture Program. (266)

The 1944 Flood Control Act authorized the first installation of improvements in 11 watersheds. But these projects, which then consisted mainly of accelerated land treatment, contained no structures. (267) Within the Department, responsibility for flood control work was divided between the Soil Conservation Service and the Forest Service. Both were instructed to

tained rigorous acreage limitations and antispeculation provisions, and authorized the Secretary of the Interior to acquire and sell private land at appraised dry-land prices.

consult with what was then the Bureau of Agricultural Economics and the Production and Marketing Administration. (268)

The Department's watershed reports began to include proposals for structural measures after 1948. Secretary Charles A. Brannan's 1949 Missouri Basin Agricultural Plan, which was intended to coordinate the authorized programs of the Corps of Engineers and the Bureau of Reclamation with departmental soil conservation and farmer service programs, contained proposals for structures estimated to cost \$1 billion. In 1950, the Fiscal Year 1951 USDA Appropriation Act contained language that permitted the 11 watershed projects to include upstream floodwater detention reservoirs, channel improvements, and other structures. (269)

Then in 1951, a subcommittee of the House Committee on Agriculture began hearings on the Missouri Basin Agricultural Plan. At these hearings, members supported their constituents' demands that watershed flood prevention for the purpose of protecting farmers from flood damage in upstream areas be started without waiting for full river basin development. (270) In 1952, the chairman of the subcommittee introduced a bill that would implement a small watershed program. But this bill was stopped in the House Rules Committee by Public Works Committee members who agreed with Corps of Engineers and Bureau of Reclamation opponents. (271)

In 1953, with the change in party control of both the executive branch and Congress, three significant things happened:

- (1) As a result of departmental reorganization, the Soil Conservation Service was given full administrative responsibility for watershed programs. (272)

- (2) The new chairman of the House Agriculture Committee reintroduced a small watershed bill embodying most of the features of the one introduced in the preceding Congress.

- (3) Supporters of the small watershed program on the House and Senate Appropriations Committees obtained the appropriation of \$5 million for a "pilot" watershed program to demonstrate the effectiveness of 62 watershed protection projects in 31 States. Neither the Department of Agriculture nor the Bureau of the Budget had submitted estimates for this program, nor was there any specific legislative authorization for it.

Public Law 566, which inaugurated the small watershed program, was passed in 1954. Robert J. Morgan, writing in 1957, asserts that it was a Soil Conservation Service program, wanted by the Soil Conservation Districts and their bipartisan congressional supporters, but at variance with both the river basin planning

approach of the Truman administration and the "free enterprise" thinking of the Eisenhower administration. (273)

For watersheds not exceeding 250,000 acres, Public Law 566 authorized the Secretary of Agriculture to help local organizations plan and carry out works of improvement for flood prevention and agricultural aspects of water use and conservation. This assistance was to include conducting investigations and surveys, determining the engineering and economic feasibility of plans, and entering into agreements with local organizations and furnishing them with financial and other assistance.

A plan could provide for no single structure with more than 5,000 acre-feet of total capacity. And local organizations were to pay an equitable construction cost share determined by the Secretary. (274)

Public Law 566 was amended in 1956 in response to complaints that the act gave its local clientele less financial assistance than the programs of the Corps and the Bureau of Reclamation had, and that local interests who wished to participate were unable to meet their costs. Both the President and the Department of Agriculture opposed the amendments, but to no effect. (275)

The key 1956 amendments provided that all costs allocated to flood prevention would be borne by the Federal Government and that the Secretary could make loans of up to \$5 million to local organizations to finance their share of other costs. The 1956 Act also authorized the inclusion of works for municipal and industrial water supply. However, such works were to be totally paid for by local interests; not even SCS engineering assistance would be available for this purpose. In addition, individual works could now have a total capacity of 25,000 acre-feet, providing that not more than 5,000 acre-feet were devoted to flood protection.

The 1956 Act also changed the rules concerning agency review and congressional committee supervision. The smallest projects require neither authorization by Congress nor review by the other construction agencies. Such projects may not require Federal financial assistance in excess of \$250,000, nor may they contain any structure larger than 2,500-acre feet in capacity. Larger projects require review by the Corps. If they include irrigation works or affect public lands or wildlife, they must also be reviewed by the Interior Department. Larger projects must be individually authorized by Congress, and the dividing line of congressional committee jurisdiction over them is 4,000 acre-feet in capacity. If a plan does not involve the construction of any single structure over this

amount, it is reviewed for authorization by the Agriculture Committees of the two houses of Congress. But if any structure exceeds the 4,000 acre-feet limitation, the plan requires the approval of the two Public Works Committees. (276)

An additional amendment in 1958 authorized the Secretary of Agriculture to pay an equitable share of the cost of works for fish and wildlife development. (277)

After the passage of Public Law 566, the SCS was responsible for three separate construction programs: (1) The 11 watersheds authorized for treatment in section 13 of the Flood Control Act of 1944; (2) the 62 "pilot" watersheds of 1953; and (3) the Public Law 566 projects.

The 1944 projects were limited until 1960 to flood prevention work. They were much more ambitious as to costs and size of structures than those attempted under Public Law 566. However, they were much smaller than the larger projects of the Corps and the Bureau. As in the case of Corps of Engineers projects authorized in the 1944 Act, appropriations have been made very slowly and all projects are not yet completed. (278)

The 62 "pilot" watershed projects of 1953 were smaller undertakings, originally intended to be completed as demonstration projects in 5 years. Eight were discontinued. The rest have been completed more rapidly than the 11 watersheds of section 13. All but seven were completed at the end of fiscal year 1961. (279)

Public Law 566 projects have also been very small. These must be initiated by application of local organizations approved by the appropriate State agencies. By 1961, the number of applications considered suitable for planning had greatly exceeded the availability of funds. However, the number was much smaller than the number of projects the SCS considered desirable from the viewpoint of soil and water conservation needs. As of January 1961, 1,088 projects were estimated suitable for planning. Of these, 216 were being planned, 289 were authorized for operation, and 11 were completed. (280)

In addition to creating a new construction program, Public Law 566 repealed the planning authorization of the Department of Agriculture under flood control law, except as applied to the 11 Act of 1944 watersheds and the pilot watersheds. Instead, the 1956 legislation authorized the Department to cooperate with Federal, State, and local agencies in investigating watersheds of waterways as a basis for developing coordinated programs. This authorization became the basis of departmental participation in the Washington-level

interagency committee and five river basin interagency committees. The Department also participated in this period in seven cooperative surveys let by the Corps, one led by the Bureau of Reclamation, and six in cooperation with State Governments.

Public Law 566 planning involved only slight participation of departmental agencies other than the Soil Conservation Service, principally the Forest Service. But the cooperative river basin surveys involved considerable participation by other agencies, principally the Agricultural Research Service (which then included the organization which has since become part of the Economic Research Service) and the Forest Service. (281)

The Tennessee Valley Authority. Construction of the TVA's dam and reservoir program was hastened as a result of World War II. Beginning with rearmament in 1939, and on into the war and postwar periods, increasing quantities of electric power were needed for manufacturing aluminum for aircraft and for developing atomic energy. As a result, the TVA had built 20 multiple-purpose dams on the main stem and major tributaries of the Tennessee River by 1953. The Tennessee became the first major river of the United States that could be said to be near total development. (282)

With the larger streams in its watershed under regulation, the TVA found that the heights of major floods in the Tennessee and the lower Ohio and Mississippi River systems were greatly reduced. But many towns in the region still faced damaging floods from smaller streams. For most of these problem areas, no economically feasible plan of structural protection could be designed. In 1953, therefore, the TVA began a cooperative program with the valley States and local governments involving land use planning at the local level, to help communities avoid flood damage where they could not prevent floods.

Under this program the TVA, on request, identifies the areas subject to flooding and furnishes the community and the State planning agency with physical data on the community's particular flood problem. The local planning agency with the help of the State makes use of this data to prepare a plan recommending flood protection works, flood plain regulations, flood proofing regulations, or a combination of these measures. The adoption of zoning ordinances, subdivision regulations, and other measures needed to implement the plan is, of course, the locality's responsibility.

By 1959, 21 communities had initiated flood plain planning studies and nine communities had officially adopted some type of flood plain regulation. In addition, TVA flood reports were used by State highway departments in planning highways and bridges, and by

a number of Federal agencies in planning and financing public projects and in guaranteeing or insuring home loans.

The success of the program prompted the agency to recommend its use nationally in a report to the Senate Committee on Public works on August 31, 1959. (283) Subsequently, the Flood Control Act of 1960 authorized the Corps of Engineers to undertake a similar program.

Emergence of New Planning Agencies

The Public Health Service (PHS). Since 1912, the Public Health Service has been authorized to study and disseminate information on public health aspects of water pollution. As noted in chapter IV, the Service had taken a leading part in the water pollution studies sponsored by the National Resources Committee.

The 1948 Water Pollution Control Act (284) authorized the Surgeon General of the Public Health Service, then a part of the Federal Security Agency, to cooperate with Federal, State, interstate, and local agencies in preparing comprehensive pollution control plans for interstate rivers. It also provided for collection and dissemination of information, technical aid to States and localities, and encouragement of cooperative State action and enactment of uniform State laws and compacts. In addition, it authorized a modest program of grants to States, municipalities, and interstate agencies for research and planning.

The 1948 legislation also provided an abatement procedure whereby the Surgeon General, following a hearing, would give notice of the pollution of interstate waters and recommend remedial measures. But the act made no provision for enforcement action without the consent of the State in which the pollution originated.

The 1948 Act also authorized a program of loans and grants to local governments for the construction of sewage treatment works. But no funds were ever appropriated for this purpose.

In 1953, the Public Health Service became part of the newly created Department of Health, Education, and Welfare.

Recognition of the weakness of the Pollution Control Act led to the passage of a considerably stronger bill in 1956. The 1956 Act authorized a program of 30-percent incentive grants to subsidize municipal waste treatment plant construction. (285) The amount authorized was comparatively small (\$50 million a year) and the limit for individual projects low (\$250,000). Nonetheless, Public Health Service figures showed a 62-percent rise in sewage treatment plant construction during the first 5 years of this program

compared with the previous 5 years. But the number of persons served by sewers continued to increase more rapidly than the number of persons served by sewage treatment works. (286) And the increase in this period in industrial pollution was enormous.

In addition, the 1956 legislation strengthened the Federal abatement procedure. It authorized the Surgeon General to initiate a "conference" between State water pollution control officials, on means of dealing with interstate water pollution situations. If the conference procedure and the hearing procedure were not effective in bringing about necessary remedial action, the Surgeon General was authorized to bring an action against the alleged polluters. Consent of the State in which the alleged pollution originated was no longer required for the enforcement action.

The 1956 Act authorized grants for State and interstate pollution control programs, to be based on the Surgeon General's approval of plans prepared by State and interstate agencies. The act also initiated a program of scientific water quality studies.

During this period, the Public Health Service, relying on data supplied by State agencies, made considerable progress in accumulating data concerning treatment facilities and waste-water discharges (more completely from municipal than industrial sources). It also collected data from a national water quality network operated voluntarily by State and local agencies, industries, universities, and Federal agency installations. But apart from its financial assistance to State and interstate agency planning, it made very little progress in pollution control planning on the basin level. (287)

The first major effort to develop a comprehensive plan for water pollution control was started in 1957 in the Arkansas and Red River Basins, on the recommendation of the Arkansas-White-Red River Basins Inter-agency Committee. This was a cooperative venture of the Public Health Service with the Corps of Engineers. (288)

A Chesapeake Bay-Susquehanna River Basins Project got underway in the late summer of 1960. But because of funding limitations, it did not become fully operational in the period under review. (289)

The Public Health Service also had long-standing authority to compile data on water supply facilities. After the passage of the Water Supply Act of 1958, the PHS undertook the responsibility to study the necessity of storage for municipal and industrial water supplies in connection with Federal reservoir projects, and to advise the construction agencies on the need to include such storage in planning reservoir projects. (290)

The Fish and Wildlife Service. The 1946 Fish and Wildlife Coordination Act provided for consultations aimed at preventing loss or damage to wildlife whenever any Federal agency or non-Federal agency operating under Federal permit was authorized to impound, divert, or control waters. All Federal construction agencies were required to consult with both the appropriate State agency and the Fish and Wildlife Service of the Department of the Interior. (291)

The reports and recommendations of the Secretary of the Interior and the State agency were then to be included as an integral part of the report of the Federal construction agency. The 1946 Act provided that the cost of planning, construction, and maintenance of facilities for wildlife protection should be part of the cost of the projects and that such costs should be non-reimbursable in reclamation projects.

In 1958, the Fish and Wildlife Coordination Act was amended to add positive wildlife enhancement planning to the purposes about which the Federal construction agencies must consult the Fish and Wildlife Service. (292) The new act also provided for Fish and Wildlife Service review of Public Law 566 projects.

The National Park Service. The National Park Service began making reports in the early 1940's to the Bureau of Reclamation concerning the recreation potential of reservoir sites and entire river basins. In 1947, the Service was given blanket responsibility for recreation planning at reclamation projects. (293) However, the Bureau was not able to secure legislative authorization for including recreation benefits in its project plans and allocating the costs to the Federal Government. (294)

Beginning in 1945, the National Park Service also undertook recreation planning for Corps of Engineers projects when requested to do so. (295)

The Service did not share either the Bureau's opinion of the overriding importance of serving large numbers of people with irrigation water and electric power, or the Corps' opinion of the importance of flood control structures. It frequently opposed reservoir projects of both construction agencies that would inundate scenic or historic sites or spoil wilderness areas. (296)

The Congressional Committees

The Legislative Reorganization Act of 1946, which consolidated the numerous standing committees in both houses, (297) created the congressional committee structure that was responsible for writing water resources legislation during most of the postwar period.

This structure, with several changes related to programs initiated since 1961, is still responsible for all water resources legislation. (298)

The House and Senate Public Works Committees were responsible for the navigation and flood control programs of the Corps of Engineers; the research and construction grant programs of the Public Health Service; the TVA; and the largest P.L. 566 projects of the Soil Conservation Service.

The Interior and Insular Affairs Committees of the two Houses were responsible for reclamation projects including multiple-purpose hydroelectric power projects, collection of basic data on surface and ground water by the Geological Survey, the desalting program, and all programs carried out in National Parks, Indian lands, and public lands.

The Committees on Agriculture in the House, and Agriculture and Forestry in the Senate, were responsible for SCS watershed activities with the already-noted exception of the largest P.L. 566 projects, involving structures of over 4,000 acre-feet capacity.

Thus, the three major substantive legislation committees dealing with water resources were each concerned with the program of one of the three construction agencies.

In addition, the Interstate and Foreign Commerce Committee of the House and the Commerce Committee of the Senate were responsible for legislation regulating transportation, inland waterways, and interstate transmission of water power. The Merchant Marine and Fisheries Committee of the House and the Commerce Committee of the Senate continued to handle most fish and wildlife legislation even though the Fish and Wildlife Service had been transferred in 1940 from the Department of Commerce to the Interior Department.

Water projects involving international treaties with Mexico or Canada came under the jurisdiction of the House Foreign Affairs and the Senate Foreign Relations Committees.

The Appropriations Committees of both Houses were very significant in the water programs of all agencies because they reviewed the agencies' budget requests and made their own recommendations for funding. From time to time, as in the case of the pilot watersheds, they were able to authorize in an appropriation bill a project or program which had not been considered by the appropriate substantive legislation committee.

Both Appropriations Committees created subcommittees responsible for major spending legislation. The powerful Subcommittee on Public Works Appropriations in each body was and is responsible for funding

water resources and other programs of the Corps of Engineers, the Bureau of Reclamation, the TVA, and the power marketing agencies of the Interior Department. Appropriations subcommittees always include representatives of the substantive legislation committee whose agency's funding is being considered.

Also influential were the two Committees on Government Operations. Not only did they consider reorganization legislation involving water resources agencies, but they also made studies and reports with a view to improving the efficiency and economy of agency programs.

Western interstate compacts concerning apportionment of water for irrigation purposes were referred to the two committees on Interior and Insular Affairs. But interstate compacts generally were referred to the Judiciary Committees of both Houses. This meant that the Judiciary Committees had responsibility for approving Eastern States' compacts involving flood control, pollution control, and municipal water supplies.

In 1960, the 17-member Senate Committee on Interior and Insular Affairs consisted of 14 Senators from the original reclamation States and three from Alaska and Hawaii. The 31-member House Interior Committee included 23 Senators from Western States, seven from non-Western States, and the nonvoting delegate from Puerto Rico.

The members of the two Agriculture Committees, of course, represented rural congressional districts or States with large farm populations. But farm populations in the arid West were better represented on the two Interior Committees. Thus, only four of the 14 members of the Senate Agriculture Committee were westerners and all of the four were from the Great Plains Region, which was the locus of several Agriculture Department programs as well as of Interior Department programs.

The two 1960 Public Works Committees had a very widely distributed membership, reflecting the nationwide geographical distribution of flood control and river and harbor improvements. The 17 members of the 1960 Senate Public Works Committee included only one Senator from a State affected (somewhat) by the Lower Mississippi Flood Control Project. The 1950 Public Works Committee had included four senators out of 13 from States that were, at least partly, on the lower Mississippi Basin. (299) However, the 1960 Public Works Subcommittee of the Senate Appropriations Committee was chaired by Senator Ellender of Louisiana and included two other lower Mississippi Basin members who had been members of the Senate Public Works Committee in 1950. (300)

In 1960, the two Public Works Committees were the only major water resources committees with significant urban representation. But it could hardly be said that even these committees represented the water problems of large urban areas. Of the 17 members of the Senate Public Works Committees, only four represented highly urbanized States (one Eastern State and three Midwestern). The 33-member House Committee had a larger proportion of members from districts in big urban complexes. But they were strongly outnumbered by representatives from middle-sized cities, small cities, and rural areas.

Development of Planning Procedures

After the demise of the National Resources Planning Board, the executive branch did not have an organizational unit with authority to propose overall societal priorities for Federal water resources programs. Complete responsibility for determining the comparative utility and urgency of planning agency proposals was assumed by congressional committees many of whose members because of their geographical background were inclined to agree with the social objectives of the particular agency whose program was being considered.

In this situation, both Congress and the Bureau of the Budget insisted that all projects must at least pass a test of economic feasibility. The most critical task of the project planner, in addition to demonstrating engineering feasibility, was to prove that:

- (1) the benefits of the project exceeded its costs, and
- (2) local interests had obligated themselves to repay and probably could repay the costs not properly allocated to the Federal Government.

Problems of Benefit-Cost Analysis

Beginning in the period under discussion, much literature has dealt intensively with economic evaluation of water resources projects. My treatment of this subject is more superficial and is limited to the most controversial policy issues, observed from an institutional and political point of view.

Overestimation of primary benefits and underestimation of primary costs. Estimating the economic benefits of a water development project is not easy. Estimates are not completely reliable because of the uncertainty of component elements such as crop yields, cost of production, prices of agricultural products, and kinds and quantities of materials which would be transported by water as a result of the con-

struction of a navigation project. Neither are hydrologic data concerning the behavior of surface, ground, and reservoir water completely certain. This means there is always considerable chance that construction agency planners—who are charged with implementing a water development mission—might overestimate a project's economic feasibility.

During the 1950's, the research efforts of official study commissions and respected social scientists focused attention on what they found to be the tendency of construction agency benefit-cost analysis to be unduly optimistic. (301) Thus, for example, Clarenbach concluded for the Task Force on Water and Power of the 1955 Hoover Commission that the Corps of Engineers and the Soil Conservation Service were overestimating the extent of agricultural flood damages and the associated value of land enhancement through flood control. (302)

In addition, methods used to estimate primary benefits and costs differed among the planning agencies and between the agencies and the Bureau of the Budget, a situation which added to the belief of scholars and Government officials that benefit-cost analysis was being misused. Disputed matters included interest and price levels, length of period during which benefits and costs should be assessed, and whether local and Federal taxes foregone should be calculated. (303)

Secondary benefits. During the depression, perhaps the most important objective for Federal public works was the attainment of secondary benefits—that is, benefits to others than the water users. (Secondary benefits generally accrue in the locality or region of the project.) In the postwar period, full employment and the multiplicity of other public and private investment opportunities reduced the social importance of secondary benefits. Accordingly, questions were raised about the propriety of using such benefits to obtain favorable benefit-cost ratios. Of the three construction agencies, only the Bureau of Reclamation used secondary benefits in this way. (304)

Of course, the primary social objectives of the reclamation program were the secondary benefits of irrigation projects—regional economic development in the arid West and stabilization of agricultural economies subject to drought in the Missouri Basin. (305) Western Congressmen generally supported the social objectives of the reclamation program, although crop surpluses had largely replaced rural poverty as the agricultural problem of the postwar period.

Intangible benefits. Another question raised by planning agency reliance on benefit-cost analysis was

whether adequate consideration was given to values that could not be reduced to monetary terms. Examples of these were the saving of human life and well-being through flood control, and recreation and scenic values, including wildlife and wilderness. These "extra market" values frequently had greater, or at least wider, public support than the primary benefits of the project.

The Corps of Engineers was especially alert to the importance of preventing the loss of life and other human tragedies which occurred as a result of infrequent but very large floods. It thus became the Corps' practice to design the largest possible structures that could be built under a benefit-to-cost relationship of unity or greater. This practice was criticized as inconsistent with maximum economic efficiency, since the additional cost of building a large structure rather than a smaller one could have a benefit-to-cost relationship of less than unity. It was also the basis of disagreement with the Soil Conservation Service, when the Corps and the Service were working on interagency river basin surveys such as the Arkansas-White-Red-Basins Survey in the early 1950's. (306)

Low-flow regulation for municipal water supply and pollution control began to attract some congressional interest and resulting planning attention from the Corps of Engineers in the middle 1950's. (307) Recreational and scenic values were accommodated by the political process to a certain extent, through the access to Congress of conservationist groups and such smaller planning agencies as the Fish and Wildlife Service and the National Park Service. These smaller agencies also participated in interagency river basin surveys and in the intradepartmental efforts of Interior Department Field Committees. But neither the Bureau of Reclamation nor the other two construction agencies considered recreational and scenic values to be of great importance. Critics asserted frequently that the construction agencies were unwilling to recommend projects with unfavorable benefit-cost ratios, even when a strong case could be made for them on the basis of intangible values. (308)

Failure to evaluate planning alternatives. During the New Deal, the National Resources Planning Board did evaluate alternative plans for developing the same river basin. However, construction projects were rarely criticized on the grounds that nonstructural alternatives were adequate substitutes (except in the case of navigation projects). (309) Furthermore, the NRPB was not inclined to criticize a plan for water resources development in one region on the grounds that development in some other region might be of more benefit to the Nation, since it favored regional

economic development in all regions to end the depression.

In the post-World War II period, as pointed out by White in 1958, there was no provision for even this degree of official evaluation of planning alternatives. (310) Construction agency proposals were limited to the alternatives contemplated in their enabling legislation. Interagency river basin studies were impeded because of fundamental differences in the various agencies' missions. The Bureau of the Budget, discussed later in this chapter, did not attempt to evaluate construction agency plans but only to establish criteria that would permit comparisons. At the same time, the postwar period was the beginning of massive professional criticism of the construction agencies for ignoring planning alternatives. This criticism resulted from the growth of economic techniques for analyzing the effects of water resources projects, and the greater public interest in economic efficiency which resulted from the end of mass unemployment.

Thus, navigation project plans were criticized for failure to provide an evaluation of either the costs to dryland communities or the benefits to be gained from other methods of improving national transportation. (311) Irrigation project plans were criticized as not providing an evaluation of other means for increasing the productivity of land or of the comparative benefits of irrigation in the East. (312)

Perhaps the most telling attack on construction agency programs in the postwar period was led by geographers and hydrologists against the flood control program of the Corps of Engineers, the largest and most popular construction program. These critics pointed out that annual flood damages had actually increased since the Flood Control Act of 1936 (except in the Mississippi Valley). They asserted that because the Corps' construction program encouraged residential occupancy and commercial development of flood plains, it actually tended to increase flood losses. They criticized the Corps for failure to evaluate the alternative benefits to be gained by flood plain zoning, flood proofing of buildings, improved weather forecasting, and insurance. (313)

But in the case of water power features of water resources projects, benefit-cost analysis did take the private power alternative into consideration, in part because of the massive opposition to public power development. Two agencies were chiefly responsible for assessing the benefits and costs of hydropower projects during 1943-60.* The Bureau of Reclamation

was responsible for its own projects and the Federal Power Commission for the projects of the Corps of Engineers.

Until 1952, the Bureau of Reclamation evaluated power benefits with concepts similar to those it applied to irrigation. Primary power benefits were assumed to be equal to the expected power revenues to be collected by the Bureau. Secondary benefits were assumed to be the expected effect of the new power source on local industrial development, and the savings to the consumer and the retailer of the power. But in 1952, the Bureau changed its procedures to measure benefits from power by the cost of power from the most economical alternative sources.

The Federal Power Commission also used this latter principle and did not include indirect benefits in its computations. But it did use higher interest and tax charges in calculating the cost of private alternatives, with the result that public power had the lower cost.

The private power alternative considered in benefit-cost analysis was usually steam power. Steam plants were generally located closer to the markets, reducing transmission costs. The unit cost of steam generation was generally lower than at new hydropower plants and promised to become still lower as a result of technological change.

On the other hand, whereas the initial investment cost for hydrogenerators is high compared with fuel generators, operating and maintenance costs are low. Furthermore, hydropower is more valuable than fuel-generated power for handling emergency situations and peak loads because, unlike steam generators, it can be turned on and off almost at will. (314) Little importance was attributed, in this period, to the fact that hydropower, unlike steampower, creates neither air pollution nor thermal pollution of water.

Local Contributions and Repayment of Project Costs

Repayment is not required from beneficiaries of Federal expenditures, unless required by specific statutory provision. The enabling legislation of Federal water programs had always differed as to whether repayment was required and in what amount.

In the postwar period, local contributions tended to be low. The Eisenhower administration's policy was one of reducing Federal expenditures and encouraging local contribution. But this policy was generally

*The TVA did not use benefit-cost analysis in its planning. As the only producer of power in its area, its policy was to

meet increasing demand while keeping its rates low. Since the most economical hydropower sites had already been taken and steam generation costs had been reduced by technological progress, the TVA increased its use of steam power in this period.

effectively opposed by Congressmen and construction agency officials who believed that local contributions should be low. (315)

At the same time, the Bureau of the Budget and official study commissions tended toward the position that greater local contributions were needed for several Federal construction programs. And they did not favor increased Federal contributions for such traditionally locally borne costs as municipal and industrial water. (316)

Let us therefore review the repayment practices of the construction agencies for various types of projects.

Reclamation projects. Under reclamation law, water users are expected to repay the construction costs of irrigation facilities without interest. The repayment plans may vary with ability to repay but must not exceed 40 years. (317) However, Congress has frequently authorized longer repayment periods in cases where water users were unable to repay within the statutory period. (318)

In addition, the Reclamation Project Act of 1939 provided that power revenues could be used to repay the part of the construction cost of irrigation facilities that is beyond the water users' ability to repay. This provision became a strong incentive for Bureau of Reclamation planners to prefer multiple-purpose projects, and was much used in the postwar period.

Two different procedures were used for assigning power revenues to repay costs allocated to irrigation:

1. During the Truman administration, the 3-percent statutory interest component of power revenues was applied to the repayment of irrigation costs. This procedure was used in the justification of the Missouri Basin project.

2. The "Collbran formula," which was preferred by the Eisenhower administration, provided that power revenues received after the full amount of the capital costs of power facilities were repaid, would be applied to the repayment of costs allocated to irrigation. (319)

In the middle 1950's, some scholarly critics of the reclamation program argued that the use of power revenues to repay irrigation costs had led to water power development at sites where it was economically inefficient. They observed that most of the cheapest sites for hydropower development had already been taken during the New Deal program and that construction costs had risen greatly. Because of continuing technological advances, they concluded that steam generators had become and would become increasingly more economical. And they pointed out that the Tennessee Valley Authority, the only Federal agency with authority to generate power other than water power, was relying on steam power for its expansion.

As a result, 75 percent of its generated power would be steam electric by 1960. (320)

In 1955, Senator Douglas of Illinois opposed the Colorado River Basin project, in part on the ground that power development at its dams was excessively costly. At the same time, Senator Watkins of Utah defended this large development as justified by regional economic development. (321) For the first time in over 40 years, it could no longer be said that liberals automatically favored Federal power development or that conservatives automatically opposed it.

Corps of Engineers projects. The Flood Control Acts of 1936, 1938, and 1941 had established the local cost-sharing requirements for flood control aspects of projects as nothing for reservoir projects and no more than a possible 50 percent of the construction cost of channel projects, levees, and diversion floodways.

In the postwar period, these requirements were frequently criticized as grossly inadequate to the benefit conferred. It was also asserted that inadequate cost-sharing requirements encouraged localities to favor the planning alternatives that were most heavily subsidized and to neglect such local responsibilities as flood-plain zoning. (322) As a result, the Bureau of the Budget in 1954 proposed that if a flood control reservoir enabled downstream lands to be used more intensively, local interests should be required to assume one-half the cost of the land enhancement component. Although the revised Budget Bureau Circular A-47, which included this requirement, was never issued because of congressional opposition, this requirement was thereafter generally followed. (323)

Furthermore, the Corps did have authority to include recommendations for flood plain regulation by local authorities in its survey reports. Such recommendations, when included in project authorizations, became conditions for local performance which had to be fulfilled before construction could proceed. But critics of the Corps' flood control program asserted that such recommendations were made too infrequently. As of 1961, after more than a decade of agitation of the question, Congress had imposed such conditions in only 114 authorized projects.

Section 206 of the Flood Control Act of 1960 provided that the Corps should collect and disseminate flood hazard information for the use of local planners in areas subject to flooding. This program did not become operational during the period under study. (324)

A new formula for local cost sharing was devised for the Corps' hurricane or tidal flood protection program inaugurated in 1958. The Federal share of "total first costs" must not exceed 70 percent. Local interests are

completely responsible for lands, easements, rights or way, and relocations. But if these land-oriented costs do not amount to 30 percent of all initial costs, local interests must also contribute enough of the construction costs to supply the difference. (325)

In continuation of its longstanding policy, the Corps' rivers and harbors program makes no provision for repayment by shippers of any part of the cost of construction. However, this policy was not applied to the international St. Lawrence Seaway project, which opened the Great Lakes to ocean shipping. The Corps had originally surveyed the American part of this project in 1920 and ultimately built it, as the construction agency for the St. Lawrence Seaway Development Corporation.

The Seaway project had been favored by every American President since Woodrow Wilson, for defense as well as benefits to midwestern industrial, agricultural, and commercial interests. In 1941, the United States and Canada signed an agreement for joint construction of the project. But Congress refused to approve this agreement because it was vigorously opposed by eastern port cities and the railroads, as well as the coal industry and the United Mine Workers Union, who feared the introduction of British coal.

In 1947, the United States and Canada agreed that the entire cost of the Seaway project should be repaid by the shippers through the use of tolls. Even so, the Seaway was effectively opposed by those who saw themselves as losing economic advantages. Congress did not approve the agreement to build the project until 1954, after the Canadian Government had taken steps to build it alone if the United States should refuse to participate. (326)

For Corps of Engineers power projects, repayment of costs was allowed for in the Flood Control Act of 1944. The act gave the Secretary of the Interior responsibility to market (at wholesale) the surplus power developed at reservoir projects built by the Corps. (327) The Southwestern Power Administration and the Southeastern Power Administration were created for this purpose. The Bonneville Power Administration was assigned responsibility to market power produced at dams constructed by the Corps and the Bureau of Reclamation in the Pacific Northwest. (328)

The 1944 Act provided that the rate schedule, which must be approved by the Federal Power Commission, should be drawn so as to repay to the United States the cost of producing and transmitting the power, "including the amortization of the capital investment allocated to power over a reasonable period of years."

The amortization requirement was construed to mean that interest was one of the costs that must be repaid. In the absence of a statutory interest rate, the Federal Government's own borrowing rate of 2½ percent was adopted. Fifty years was selected as the "reasonable period" within which the total construction cost allocated to power must be repaid. (329)

Both the 2½-percent Army project interest component and the 3-percent reclamation project interest component were criticized as being unrealistically low. In addition, it was asserted that Federal power rates were too low, because they did not include the cost of the State, local, and Federal taxes from which Federal enterprises were exempt but which private power producers had to pay. It was asserted that low Federal power rates constituted both unfair competition with private enterprise and an unwarranted national subsidy of regional economies. (330)

Soil Conservation Service projects. For projects authorized under flood control law, the Secretary of Agriculture had discretion to require local contributions in money, materials, and services. (331) However, the second Hoover Commission's Task Group on Flood Control found that local contributions to dams completed or under construction as of 1954 were, in fact, insignificant, consisting mainly of soil conservation measures installed by farmers above the dams. (332)

For small watershed projects authorized under Public Law 566 and its amendments, sponsoring organizations are required to contribute lands, easements, and rights of way. Local sponsors must also assume the responsibility and the costs of maintaining and operating completed structures. Neither of these contributions were or are required from beneficiaries of flood control reservoir projects built by the Corps of Engineers.

After 1956, construction costs allocated to flood control were, and still are, fully borne by the Federal Government. But the sponsoring local organizations had to pay what the Secretary determined to be an equitable share, "in consideration of identifiable benefits" of the construction costs allocated to agricultural uses of water. After 1958, when wildlife development became a planning purpose, the same "equitable share" principle was applied to wildlife development.

Construction costs allocated to municipal and industrial water and low-flow regulation had to be fully repaid by the local organizations. Local organizations could obtain loans of up to \$5 million on a single project, to finance their assigned cost share. These loans had to be repaid in 50 years at the Government's

2½-percent long-term interest rate. (333) Moreover, the Department of Agriculture, unlike the Corps and the Bureau of Reclamation, would not approve the use of irrigation and drainage aspects of its water projects to bring new land into production. (334)

But despite these restrictions on the initiation of projects, Clarenbach expressed in 1961 the opinion that the small watershed program's heavy subsidies to flood control, drainage, and irrigation were inconsistent with the Department of Agriculture's programs for reducing crop surpluses and withdrawing land from production. (335) Both Clarenbach and White maintained at this time that Public Law 566 provided yet another example of the tendency of subsidies to favor treatment work with lower economic returns but higher Federal participation. (336)

Municipal and industrial water supply development costs under all three construction programs. The Flood Control Act of 1944 gave considerable latitude to the Secretary of the Army in determining the amount of reimbursement required for the cost of municipal and industrial water supply facilities. (337) The Reclamation Project Act of 1939 gave the Secretary of the Interior discretion as to whether to include interest charges in the price of municipal water supplies. (338) But the policy of both agencies was to provide for full reimbursement for municipal and industrial water storage costs, including interest, and this was also the position of the Bureau of the Budget. (339) In Soil Conservation Service projects, as noted above, the law specified that local organizations must repay "all costs" for purposes other than flood control, agricultural uses of water, and fish and wildlife preservation and enhancement.

The Role of the Bureau of the Budget

Following the abolition of the National Resources Planning Board in 1943, President Roosevelt issued Executive Order 9384. This order directed that all public works construction agencies prepare, and keep up to date, long-range programs which must be submitted annually to the Bureau of the Budget. The Bureau was required to consolidate these programs and prepare an overall advance program for the executive branch. Before an agency could submit a report to Congress on any aspect of its advance program, it was required to submit the report to the Budget Bureau for advice as to the relationship of the program to the President's own program. And the agency was to include a statement of the advice of the Budget Bureau in its report to Congress. (340)

Executive Order 9384 appeared to give the Budget Bureau much of the authority to coordinate construction agency planning that the National Resources Planning Board had possessed. But this appearance proved to be illusionary.

In the first 2 years following the Executive order, the Budget Bureau proposed to set up a new division to review and coordinate the Federal public works program, and received a small appropriation for this purpose. But in 1945, Congress refused to appropriate money for the proposed new division on the grounds that the new Federal Interagency River Basin Committee could adequately undertake the function of coordinating construction agency programs. The division was never established and the Budget undertook the responsibilities assigned it by Executive Order 9384 with existing personnel. (341)

Consequently, the extent of the Budget Bureau's review of construction agency programs was very limited. The Bureau did not attempt to evaluate the comparative social utility or urgency of project proposals or their conformity to larger regional plans, as had the National Resources Planning Board. Neither did it attempt to assess the accuracy of agency estimates of project benefits (as the Jones Subcommittee to Study Civil Works and the second Hoover Commission's Task Force on Water Resources and Power were to do). (342) Instead, it undertook to supervise agency methods of economic justification of projects, in the interests of economic efficiency and uniformity.

In December 1952, in the last days of the Truman administration, the Bureau of the Budget sent Circular A-47 to the heads of agencies involved in water resources projects, to inform them of the standards it proposed to use in accepting or rejecting agency evaluations of water resources projects. This circular was adopted by the Eisenhower administration. In 1954, the Bureau revised Circular A-47 to incorporate the partnership principle, but the revised circular was never formally adopted. (343)

Circular A-47 contained the provision that not only must the total benefits of a project exceed its costs, but the benefits of each purpose of a multiple-purpose project must exceed the cost of including such purpose. It also provided that (where permitted by the enabling legislation) local interests should contribute one-half of the land enhancement value of flood protection. It provided that "taxes foregone" should be included in the estimates of project costs and that a 50-year maximum period should be set for repayment of Federal investment.

These requirements were criticized by both the major congressional water resources committees and the construction agencies as unduly "restrictive." Many Congressmen considered them an executive usurpation of congressional powers. (344)

The Role of Interagency Coordinating Committees

In 1943, after the National Resources Planning Board was abolished, the three Departments of the 1939 Tripartite Agreement—Agriculture, Interior, and War—and the Federal Power Commission entered into a new agreement to coordinate their separate responsibilities in the preparation of river basin surveys. This agreement established the Federal Interagency River Basin Committee (FIARBC), familiarly known as "Firebrick," a voluntary organization without central executive supervision or statutory powers conferred by Congress. The Department of Commerce became a member of the Committee in 1946, the Federal Security Agency (then the supervising authority of the Public Health Service) in 1950, and the Department of Labor in 1953.

"Firebrick" consisted of departmentally designated representatives, generally just below sub-Cabinet level. It met monthly to discuss the formalized review of each agency's reports by the other agencies, a procedure that was partially incorporated into law in the 1944 Flood Control Act.

Through the work of its technical subcommittees and special subcommittees set up to settle agency disputes, the Committee also brought together people from its member agencies. It established procedures by which reports of regional offices of each of its members were distributed to the appropriate regional offices of its other members' agencies.

The Committee set up regional interagency committees for specific basins: the Missouri in 1945, the Columbia in 1946, the Pacific Southwest in 1948, and the Arkansas-White-Red and the New York-New England Basins in 1950. The Arkansas-White-Red and the New York-New England Basin committees were chaired by the Corps of Engineers. The three western interagency committees rotated the chairmanship among the member agencies. All the regional committees included representatives of the affected States (not in all cases as full members). Like the national committee, the regional committees were generally permitted to take action only on the basis of unanimous consent.

However, the regional committees were not able to reconcile separate agency plans and policies to the

point of providing the integrated river basin plans that had been the aim of the NRPB. The regional committees were generally brought into the planning process only after conflicting project proposals of the separate agencies were already in existence, as in the Missouri and Columbia Basins. Or after one agency had completed extensive planning in the basin, but before another agency had begun, as in the Arkansas-White-Red Basins. Like their parent body, the regional committees were given no overall societal goals, applicable to all participants, apart from the necessity that benefits exceed costs. (345)

In the Missouri Basin, the task of the regional interagency committee was limited by the Pick-Sloan compromise. The Pick-Sloan plan consisted mainly of a division of projects between the Corps of Engineers and the Bureau of Reclamation, by which each agency agreed to forego the privilege of criticizing projects assigned by agreement to the other. (346)

In the Arkansas-White-Red Basins, 5 years of interagency conflict on projects and policies prevented the regional committee from achieving what it had originally intended, a comprehensive plan in sufficient detail to serve as a basis for authorizing projects. It also left the low-dam proponents of the Department of Agriculture dissatisfied. (347)

Instead, a "physical plan" submitted in 1955 inventoried possible agency projects, coordinated in varying degrees, as a framework for possible development in the next 25 years. In 1958, Robert Pealy wrote that this plan was, with all its faults, technically better and better coordinated than any previously accomplished in any other major river basin planning effort. (348)

The New England-New York Interagency Committee (or NENIAC) plan, also completed in 1955, was also the product of an interagency, intergovernmental study led and dominated by the Corps. It too was a general inventory of possible future development in the region. (349) It too failed to satisfy the Agriculture Department participants as to the physical and economic justification of large flood-control dams in the main channels, rather than small ones in the headwaters. (350) In addition, it failed to include the Interior Department's proposals concerning fish and wildlife protection, redevelopment of existing hydro-power sites, and preservation of cultural and historical values by zoning. Acting Secretary of the Interior Davis was prophetic in advocating not only that future interagency studies have an independent chairman and staff, but that they include alternative plans for development and unreconciled minority opinions on significant issues. (351)

In 1950, Firebrick's Subcommittee on Benefits and Costs submitted a report on "Proposed Practices for Economic Analysis of River Basin Projects," which became known as "The Green Book." The subcommittee recommended that the report be adopted by all Federal agencies for justification of projects, formulation of river basin plans, and allocation of costs of multiple-purpose projects.

But, although the Green Book was approved by the agencies, it was understood to be binding on none of them. The Bureau of Reclamation did not accept its restrictions on the use of secondary benefits. And the Corps of Engineers first accepted and later rejected its use of future prices to estimate benefits. (352)

With the change of administration in 1953, there was a reappraisal of interagency coordination on water resources. President Eisenhower in May 1954 requested that the FIARBC be reconstituted as the Interagency Committee on Water Resources (IACWR), now to have members of sub-Cabinet rank and to include (as successor to the Federal Security Agency) the new Department of Health, Education, and Welfare. The Departments of Commerce and Labor agreed to participate in associate member status.

The IACWR—or "Icewater," as it soon became known—rechartered the FIARBC's regional and technical subcommittees and continued the FIARBC pattern of meetings to facilitate coordination of the activities of its member agencies.

The IACWR did not undertake discussion of major policy questions, pending possible submission of proposals for water policy legislation by the Cabinet-level Presidential Advisory Committee on Water Resources Policy. (353) But the Advisory Committee's 1955 proposals to strengthen executive branch control of water resources planning were coolly received by Congress, (354) and no further proposals were made by this body.

In 1958, Congress passed two virtually identical statutes establishing two "United States Study Commissions" to draw up comprehensive river basin plans, one for the basins of eight Texas rivers (355) and the other for the basins of five rivers in the Southeast. (356) The plans submitted, like the Arkansas-White-Red Basins' "physical plan," were not to include final project designs and estimates but a framework for more detailed future plans. And the authority of each commission was to terminate after it submitted its final report to the President.

The two U.S. study commissions were organized for interagency coordination on a somewhat different basis than the regional subcommittees of the IACWR. Both of these commissions were to be presidentially

appointed. The chairman, as had been recommended by President Truman for the Arkansas-White-Red Basins and by several official study commissions for all river basin committees, was to be an independent, nongovernment person, resident in the locality. Membership was to be divided between Federal and State representatives, and the Federal members (presumably equal) were each to represent one of six Federal agencies: Agriculture; Army; Commerce; FPC; Health, Education, and Welfare; and Interior. Another innovation was that each study commission would have its own independent budget and staff.

In December 1958, President Eisenhower appointed chairmen for both the Texas and the Southeast study commissions and sent each of them a virtually identical "guide" statement. Both of these policy guidelines informed the new commissions that their objectives should be to "assure optimum sustained use of the resources of the region in the light of its overall economic requirements and secure their maximum contributions to the economic growth, strength, and general welfare of the region as well as the nation." (357)

Thus, although the two experimental river basin commissions, whose work was to continue into the 1960's, were given a new organizational form, their purpose was intended to be the traditional purpose of river basin planning—to stimulate economic growth. It seemed probable, however, that the equal participation of nonconstruction-oriented agencies would affect the objectives of the planning as it proceeded.

In 1956, following extensive hurricane flood damage, the Corps of Engineers was directed by resolution of the Senate Public Works Committee to undertake a more detailed comprehensive survey of the Delaware River Basin. Congress gave complete responsibility for preparation of the plan to the Corps. But the Corps voluntarily initiated a new form of interagency coordination. At the beginning of the investigation, the Corps invited the participation of other Federal agencies and other levels of government. (358)

The Delaware River Basin Survey Coordinating Committee, chaired by the Corps, met regularly to review the investigative work of the Corps, the Public Health Service, and the Office of Business Economics (Department of Commerce) as well as of several research and planning agencies in Interior and Agriculture and the FPC. In addition, substantial help was received from agencies of the States of Delaware, New Jersey, New York, and Pennsylvania and the cities of New York and Philadelphia, from the Delaware River Basin Advisory Committee (which represented

these States and cities), and from the Interstate Commission on the Delaware River Basin. (359)

The Corps explained its role in this survey as follows:

"The Corps of Engineers conceives of its position as being mainly that of a coordinator in the development of a plan which will encompass many functions and activities not within this Department's sphere of authority. In fact, it is probable that a major part of the plan will be carried out by non-Federal interests, or by Federal agencies other than the Corps." (360)

In addition to more conventional Federal development proposals, the 1960 survey report for this highly developed region produced a great deal of Federal contribution to urban water supply, recreation, and pollution control. (361) It is noteworthy that the section of the report on stream quality, which was prepared by the Public Health Service, places primary reliance on the waste-treatment efforts of cooperating State and local governments. (362)

For the Potomac Basin, the planning effort of the Corps, in the 1950's and extending into the early 1960's, made use of cooperative agreements with other agencies but had no basin survey coordinating committee. Here the Corps encountered strong and effective opposition from local conservationist interests because it favored impoundments for low-flow augmentation, the only pollution control method that the Corps had "jurisdiction" to implement. Opponents of the Corps' Potomac Basin plans preferred advanced waste treatment, in part because a dam near Washington would destroy scenic values and drown a portion of the historic Chesapeake and Ohio Canal. (363)

Recommendations of Official Study Commissions, 1949-55

The post-World War II period, perhaps even more than the progressive period, was one in which both the executive branch and Congress felt there was something wrong with existing Federal water resource programs. As a result, many official study commissions were appointed to make recommendations concerning some aspect of water resources planning organization or policy.

I have selected five of these as most significant for national level water resources planning. They are the two Hoover Commissions, the Jones Subcommittee of the House Public Works Committee, and two Presidential commissions: President Truman's Water Resources Policy Commission and President Eisen-

hower's Cabinet committee, the Presidential Advisory Committee on Water Resources Policy. Others such as the Missouri Basin Survey Commission, the President's Materials Policy Commission, and the Commission on Intergovernmental Relations also dealt with some of the same issues.

U.S. Commission on the Organization of the Executive Branch of the Government, 1949

The first Hoover Commission was a bipartisan organization, with members appointed by both the President and Congress. The Commission recommended the formulation of a Water Development and Use Service in the Interior Department, which would bring together the rivers and harbors and flood control functions of the Corps of Engineers with the reclamation and power activities already in the Department. (364)

It also recommended the creation of drainage area commissions representing the new Service, the Department of Agriculture, and the affected States. But, it said, "the purpose of these commissions should be coordinating and advisory, not administrative." (365)

In addition, the Commission recommended the creation of an independent board in the Office of the President (to be composed of independent, nongovernment members of the engineering profession). This board would review all project proposals of the reorganized Interior Department (from the time they were first proposed) and would also periodically evaluate and give advice as to the continuance of authorized projects. No reclamation project would be undertaken without a report to the board by the Agriculture Department. (366)

The Hoover Commission justified its recommendation of a board of review by quoting its Task Force on Natural Resources to the effect that:

"In the past projects have been carried through which should never have been undertaken at all. Others have been wastefully constructed and without regard to important potential uses. Still others have been premature. Bad accounting methods have consistently underestimated costs. Inadequate basic data, inter-agency competition, and local political pressures bear the primary responsibility for this extravagance and waste . . ." (367)

Although some attention was paid to the "need for long view planning to meet the ebb and flow of employment," the major justifications advanced for these proposed reforms were efficiency of operations and saving money for the taxpayers. (368)

None of the proposals of the first Hoover Commission were adopted. The proposal to transfer to Interior the civil works functions of the Corps of Engineers was supported by President Truman but rejected by Congress. (369) However, as Fesler pointed out in 1957, variations of the recommendations of this report were to be repeated again and again in the subsequent thinking about water resources administration. (370)

The President's Water Resources Policy Commission, 1950

This Commission of independent experts was chaired by Morris L. Cooke, the former chairman of the Mississippi Valley Committee of the Public Works Administration. The Cooke Commission saw water resources development as a means to balanced regional economic development which was needed to strengthen the entire Nation and achieve "a constantly rising standard of living for a growing population." (371)

The Commission observed, under the heading of "Future Possibilities," that the post-World War II period was one of growth of population, urban concentration, and industrialization, and considered that these changes would probably lead to a new set of water resources problems. It envisioned these problems as mainly involving the inhibition of economic growth by future water shortages, and advocated technical research into means of increasing water supplies (better groundwater utilization, weather modification, and desalinization) as the way to deal with them. (372)

Like the first Hoover Commission, the Cooke Commission favored organizational consolidation (into a Department of Natural Resources), but it directed its attention to what could be done if such reorganization should prove impossible. (373) It proposed that Congress set up interagency river basin commissions for each major basin, with equal representation from all Federal agencies with functions in the basin, participation by the States, and an independent chairman responsible to the President. (374) The work of these drainage basin commissions would be reviewed (from the beginning of the survey) by a board of review in the executive branch. The Commission recognized but did not emphasize the use of regional or valley authorities as an alternative to river basin commissions. (375)

The board of review proposed by the Commission would be composed of members "with a broad understanding of the economic and social as well as the technical, aspects of regional development." The board

would have authority to appraise all findings of economic feasibility and consider all proposals from the point of view of the total national interest. It would also be authorized to develop uniform evaluation techniques for the guidance of Federal agencies. No proposal was made that the board give particular attention to the environmental consequences of natural resources development, which in 1950 were still considered a minor matter. (376)

The Commission recommended that all proposals for authorization of water development projects be submitted in the form of basin programs. It proposed that at each step in the planning, authorization, and appropriation process, a basin program be treated as a single program for all purposes, rather than as an aggregate of plans for separate purposes, requiring separate approval. (377)

No new water planning legislation was introduced following this report, but is reported to have inspired the Bureau of the Budget to issue Circular A-47. (378)

Subcommittee to Study Civil Works of the House Committee on Public Works, 82d Cong., 2d sess., 1952

The Jones subcommittee recommended that coordination of Federal planning on the river basin level be effected through congressional policy determination and project authorization. The subcommittee said that Congress should insist that agencies coordinate their programs by refusing to authorize conflicting elements, and that Congress should issue policy statements determining four basic elements of policy:

- (1) Phases of water resource development for which the Federal Government is responsible and the extent of this responsibility,

- (2) The place of local and State interests in Federal development,

- (3) Uniform standards for economic justification of projects by all executive agencies,

- (4) Uniform standards for allocation of costs in multiple-purpose projects, and uniform criteria for the sale of products to recover such costs.

The subcommittee asserted that, if Congress followed its recommendations, there would be no need either for the executive reorganization advocated by the first Hoover Commission or for the proposed review board. It did suggest that existing interagency river basin committees could be strengthened by an independent, presidentially appointed chairman. (379)

The Jones subcommittee also had its own executive reorganization proposal. It examined the flood control program of the Department of Agriculture and

concluded that a separate upstream program was not required. The subcommittee stated that understanding the relationship of upstream runoff control to downstream flood control works was a technical problem which should be solved technically, without the exacerbation of jurisdictional separation. (380)

This recommendation of the Jones subcommittee was nullified by the House Agriculture Committee, which was already involved in the legislative history of Public Law 566, which became law in 1954.

Commission on Organization of the Executive Branch of the Government, 1955

The second Hoover Commission advocated two measures to promote central executive branch control of water resources planning:

(1) Strengthening of the Bureau of the Budget to enable it to evaluate the merits of water development projects. (381)

(2) Creation of a Water Resources Board in the Executive Office of the President (composed of Cabinet members, independent experts, and a non-government chairman). This board would be empowered to make policy recommendations and coordinate agency planning both in Washington and in the field. It would also have power to set up intergovernmental, interagency river basin commissions. (382)

The second Hoover Commission also recommended that the upstream-downstream conflict between the Corps and the SCS be resolved by having the Corps take over the upstream dam construction program of the SCS. (383)

In addition, the Commission made a number of concrete recommendations intended to eliminate Federal subsidies to public power development and distribution, and what they believed to be Federal discrimination against private utilities. The most famous of these was that the six major power organizations operated by the Interior Department should become public corporations. The Commission recommended that these organizations and the TVA be required to secure their capital for future improvements, when authorized by Congress, by issuing their own securities to the public. (384)

Presidential Advisory Committee on Water Resources Policy, 1955

President Eisenhower set up this Cabinet-level committee (consisting of the Secretaries of Agriculture, Defense, and the Interior) while the Hoover Com-

mission was still in session. The Cabinet committee's December 1955 report largely ignored the power issues, with which the Hoover Commission was greatly concerned, and did not include power development in its list of six objectives of a "sound water policy." The report declared:

"The basic elements of a sound policy are clear. That policy must look toward an adequate water supply for our people, prevent waste of water, provide for a greater reuse of water, reduce water pollution to the lowest practicable level, provide means for the useful and equitable distribution of available water supply and take steps to check the destructive forces of water which threaten to injure or destroy land, property, and human life." (385)

Thus, the Eisenhower Cabinet committee saw the primary objective of water resources planning as that of apportioning scarce water resources equitably, rather than that of apportioning Federal investments in regional development equitably as had the Cooke Commission 5 years earlier. This difference of emphasis can be partly accounted for by the unprecedented increase in industrial use of water during the 1950's.

The Cabinet committee report proposed three organizational changes on the national level:

1. A coordinator of water resources who would "cooperate with the Budget Bureau and the Council of Economic Advisers in the evaluation of departmental requests for appropriations, and assist in the reconciliation of water resources policy with other Federal policies."

2. A board of review for water resources which would analyze the engineering and economic feasibility of projects and evaluate all reports on water resources projects and on basin or regional plans "in the light of policy established by Congress and criteria established by the Coordinator."

3. A permanent Interagency Committee on Water Resources (which would have the same powers and membership as the existing national-level coordinating committee of the same name).

The Cabinet committee report also proposed the establishment of basin-level or regional committees with a nonvoting independent chairman, a small independent staff and budget and one representative from each concerned Federal agency. (386) And it recommended tightening of agency standards for economic evaluation of proposed projects and increased sharing of costs by local beneficiaries. (387)

The immediate reaction of the Senate's Public Works Committee and the Interior and Insular Affairs Committee to this report was Senate Resolution 281 of the 84th Congress. This resolution stated the

opposition of the Senate to any attempt by the President to appoint a coordinator or a board of review by Executive order, as an Executive infringement of congressional powers. The resolution also opposed Budget Bureau Circular A-47 and its proposed revision.

The "statement in explanation" of Senate Resolution 281 reveals that its sponsors were also upset that the Cabinet committee report had failed to accord adequate recognition to developing hydropower (especially as a means of financing reclamation projects), and that the report was opposed to Federal loans to non-Federal interest to pay for municipal and industrial water supplies. (388)

However, Congress established in its 1958 legislation the same form of basin-level committee proposed in the Cabinet committee report, authorizing the Texas and Southeastern study commissions.

Furthermore, the Cabinet committee enunciated, in the guise of advocacy of greater comprehensiveness in river basin planning, the beginning of a significant policy departure in the direction of an environmental approach to water resources development. It stated that most of the planning done in the past had been in flood control, navigation, irrigation, soil conservation, watershed control, and hydroelectric power at the expense of "such functions as drainage, preservation and propagation of fish and wildlife, recreation, preservation of historic and scenic areas, abatement of pollution, and municipal and industrial water supplies." (389)

In the second Eisenhower administration, both Congress and the planning agencies did pay much more attention than previously to environmental planning objectives.

Still more attention would be paid to them after the report of the Senate Select Committee on National Water Resources of the 86th Congress. But that report, which came out in January 1961, was, in many respects, the beginning of a new era in water resources planning.

The five official study commissions whose recommendations are discussed in this chapter were composed of highly regarded and influential people, and the work of the two Hoover Commissions in particular received a great deal of favorable public attention. Furthermore, despite the ideological differences between them, the findings of the five

commissions reveal a strong core of agreement in the area of water planning organization.

All five commissions favored planning for comprehensive development of river basins rather than individual purposes or projects. All five favored integrating the planning done by the various Federal agencies and State and local planners on the river-basin level. All favored the creation of overall, equitable policies for economic evaluation of projects and repayment of project costs. The Jones subcommittee believed that congressional committees, working directly with the planning agencies, could accomplish these aims. All the others believed that giving the President greater power over water planning would be necessary.

Postscript to the Postwar Period

As we have seen, the period of 17 years that followed the abolition of the National Resources Planning Board in 1943 was one in which Federal participation in water resources development and management resulted from separate programs. The separation of Federal water programs was reinforced by the separation of operating agencies and separate congressional committees, geographical jurisdictions, social-occupational clienteles, and ideological commitments.

But, as we have also seen, the trend in the opinion of policy makers was in the direction of centralization of planning. This can be seen in the recommendations of official study commissions; in the passage of legislation like the Fish and Wildlife Coordination Act and the Water Supply Act of 1958, both of which applied equally to several Federal agencies; and in the persistence of both Congress and the agencies themselves in using and refining the interagency river basin planning committee device.

By the end of the 1950's, opinion was virtually unanimous that the planning of Federal water programs should be centralized and made consistent with some kind of overall national point of view. There was, of course, little agreement about the organizational form that centralization of planning should take, and still less about the appropriate ideological basis for overall water resources policies.

BACKNOTES

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7. Hill, *op. cit.*, pp. 37-40; and Inland Waterway Commission, Preliminary Report, Doc. 325, 60th Cong., 1st sess., 1908, p. 535.
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25. Oberholtzer, *op. cit.*, vol. 4, pp. 695-696; and President's Water Resources Policy Commission, *op. cit.*, p. 127.
26. Oberholtzer, *op. cit.*, vol. 4, pp. 696-697.
27. President's Water Resources Policy Commission, *op. cit.*, p. 128; and Oberholtzer, *op. cit.*, vol. 4, pp. 696-697.
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31. *Ibid.*, p. 390.
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51. Final Report of the National Waterways Commission, Sen. Doc. 469, 62d Cong., 2d sess., 1912, pp. 22-28, 174.
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55. Hays, *op. cit.*, pp. 74-81.
56. 36 Stat. 961, as amended, 16 U.S.C. 480, 500, 513-519.
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59. Hays, *op. cit.*, pp. 208, 239; and President's Water Resources Policy Commission, *op. cit.*, p. 404.
60. President's Water Resources Policy Commission, *op. cit.*, p. 405; and Hays, *op. cit.*, p. 239.

61. 41 Stat. 1063 as amended in 1935, 16 U.S.C. 791a-825r.
62. 35 Stat. 386, June 21, 1906, amended by 36 Stat. 593, June 23, 1910.
63. "Provided further, that in acting upon said plans . . . the Chief of Engineers and the Secretary of War shall consider the bearing of said structure upon a comprehensive plan for the improvement of the waterway . . . with a view to the promotion of its navigable quality and for the full development of water power . . ." 36 Stat. 593, 594.

The comparable language of the Federal Water Power Act is: "That the project adopted . . . will be best adapted to a comprehensive scheme of improvement and utilization for the purposes of navigation, of water power development and of other beneficial public uses . . ." sec. 10(a), 41 Stat. 1068.
64. 37 Stat. 201, 233, 33 U.S.C. 609.
65. Sec. 3, 37 Stat. 801, 825, 33 U.S.C. 545.
66. Sec. 3, 39 Stat. 950, 33 U.S.C. 701.
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